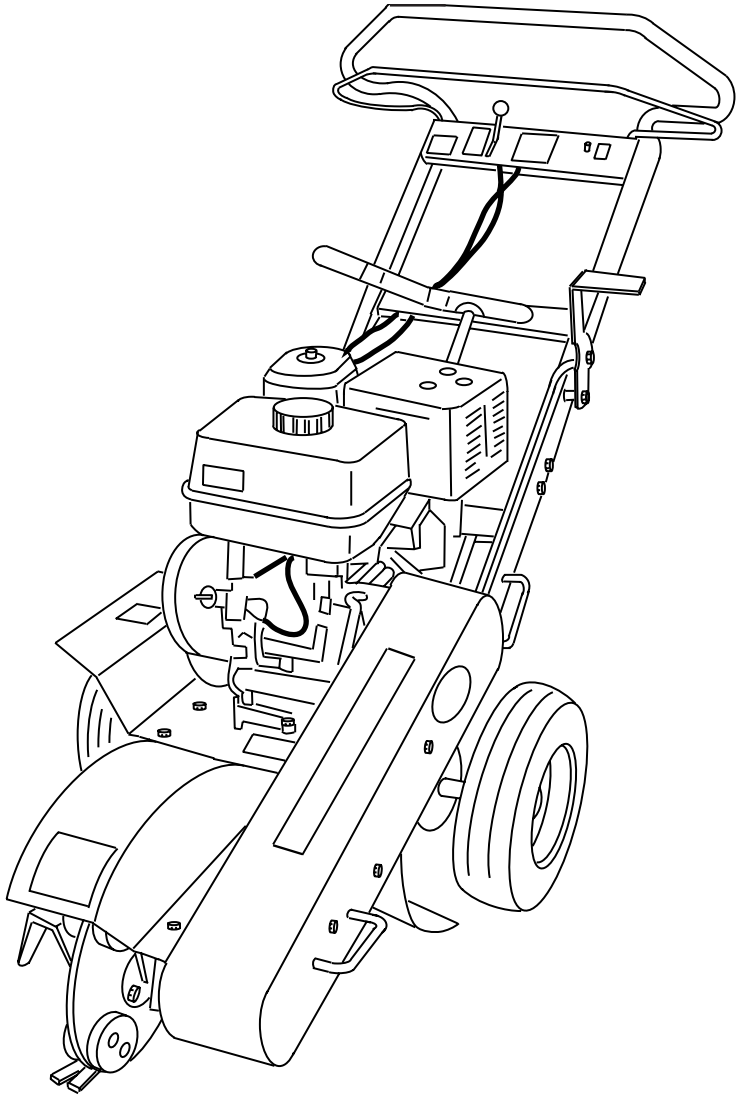
BLUEBIRD™



Operator's Manual

Model: SG1314A

MANUAL NO. 109277 REV. 01 (3/08/04)

©2004 BlueBird International.
All Rights Reserved.
Printed Beatrice, Nebraska

TABLE OF CONTENTS

Stump Grinder SG1314A

Introduction 4
- Congratulations 4
- Use 4
- Insure your machine 4
- Good service 4
- Serial number 4

Symbols and decals 5
- Location of decals 6
- Translation of instructions 6

Safety instructions 7
- General use 7
- Controls 9
- Operation 10
- Movement/Transport 11
- Storage 11
- Children 11
- Fuel System 12
- Maintenance 13

Protective Equipment 14
- Personal Equipment 14

Set-Up 15
- Equipment set-up 15

Controls 18
- Presentation 18
- Main Components and Operating Instructions 18
- Engine 19
- Cutting Unit 22

Operation 24
- Starting the Engine 24
- Normal Shutdown 26
- Shutdown in Emergency Situations 26
- Before You Start 27
- Using Your Stump Grinder 28
- Operating on Hills 30
- Transport 30

Maintenance 31
- Maintenance Schedule 31
- Cleaning the Cyclone Filter 32
- Replacing the Air Filter 33
- Cleaning the Sludge Reservoir 34
- Idle Adjustment 34
- Ignition System 35
- Adjusting the Drive Belt 36
- Disassembling & Reassembling the Blade, Pockets & Teeth 37
- Removing & Refitting the Wheels 38
- Adjusting the Brake 38
- Two Minute Rule 39
- Cleaning & Washing 39

Lubrication 40
- Lubrication Schedule 40
- Lubricating the Cables 42

Troubleshooting 43

Storage 45
- Winter Storage 45
- Service 45

Technical Data 46

Wiring Diagram 47
- Service Journal 48
- Delivery Service 48
- After the First 20 Hours 48

INTRODUCTION

Congratulations

Thank you for purchasing a BlueBird stump grinder. Through your confidence in us, you have chosen an exceptionally high quality product.

This manual is a valuable document. It describes your new BlueBird machine. Read the manual carefully before attempting to use the machine. Following the instructions (use, service, maintenance, etc.) can considerably increase the life-span of your machine and even increase its resale value. Please contact your dealer for more information.

If you sell your BlueBird machine, make sure to give the operator's manual to the new owner.

Use

The stump grinder is used to remove tree stumps. By moving the blade in sweeping movements laterally over the top and front of the stump, you can gradually grind it away. Read the chapter "Safety instructions" before you use the machine for the first time.

Insure your machine

Contact your insurance company to check on insurance coverage for your new machine. You should have all-inclusive insurance for liability, fire, damage and theft.

Good service

BlueBird's products are sold all over the world and only in specialized retail trade with complete service. This ensures that you as a customer receive only the best support and service. Before the machine was delivered it underwent inspection and was adjusted by your dealer. When you need spare parts or support in service questions, guarantee issues, etc., please consult the following professional:

This Operator's Manual belongs to machine with serial number:	Engine number:

Serial number

The serial number can be found on the printed plate attached to the frame in front of engine. The plate includes the following information:

- The machine's type designation (MODEL).
- The machine's serial number (S/N).

Please state the type designation and serial number when ordering spare parts.

The engine's serial number is punched in the crankcase under the oil level guard.

The engine type is specified on the crankcase to the right of the oil level guard but also appears on the decal on the starter.

Please state these when ordering spare engine parts.

SYMBOLS AND DECALS

WARNING!

Xxxx xxx xxxx xx xxxx x xxxx.

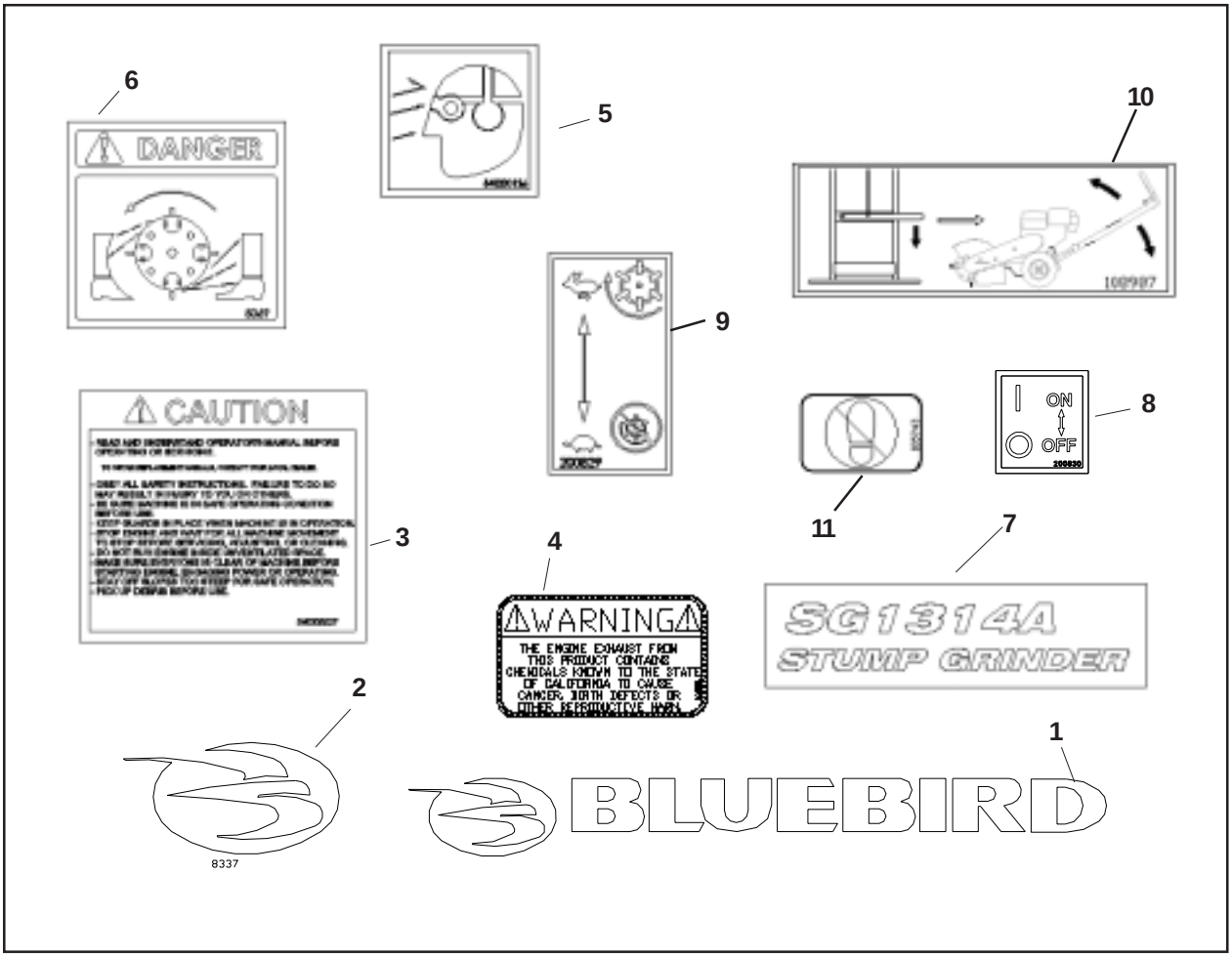
Used in this publication to notify the reader of a risk of **personal injury**, particularly if the reader **DOES NOT** follow the instructions given in the manual.

IMPORTANT INFORMATION

Xxxx xxx xxxx xx xxxx x xxxx.

Used in this publication to notify the reader of a risk of **material damage**, particularly if the reader **DOES NOT** follow the instructions given in the manual. Used also when there is a potential for misuse or misassembly.

Decals and machine-bound instructions

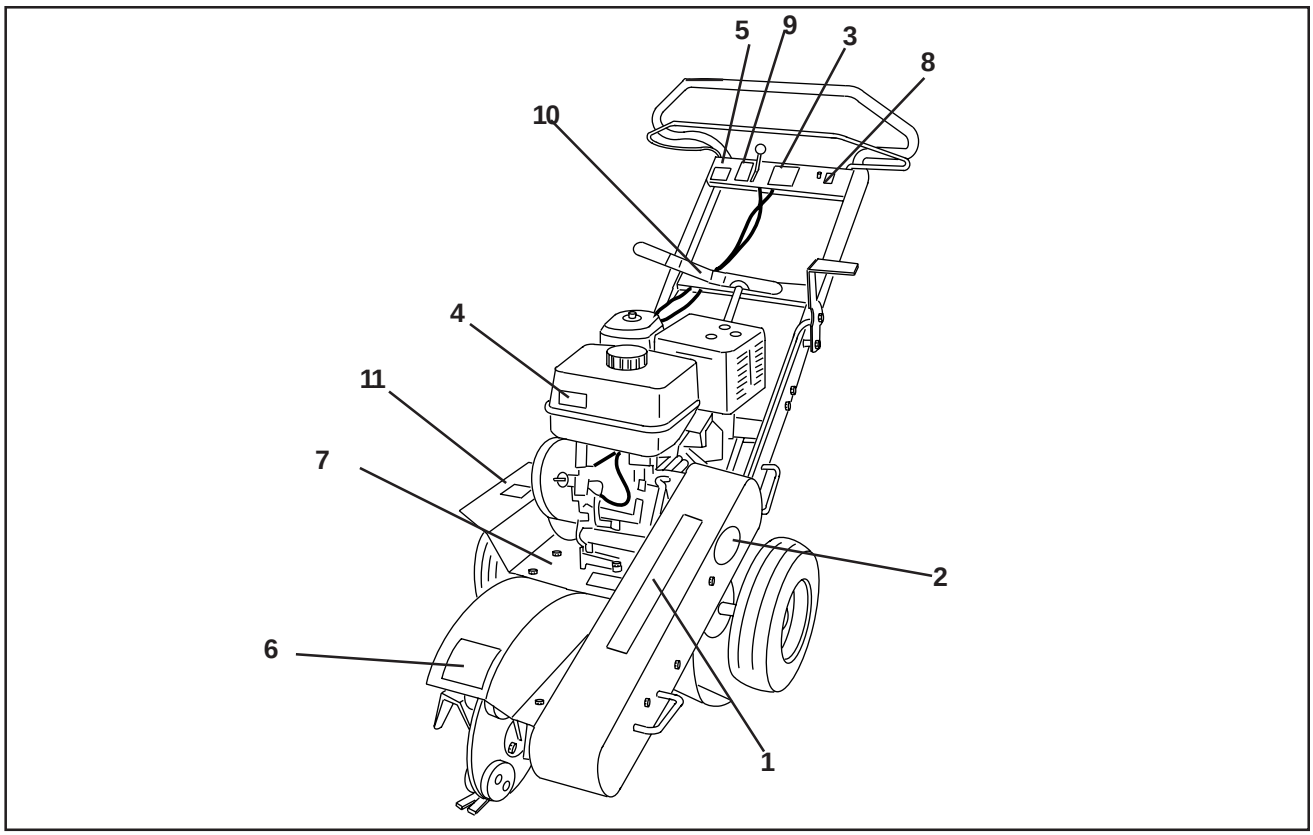


Decals that are missing or illegible shall be aquired/ replaced before using the machine.

1. BlueBird logo
2. BlueBird logo
3. General precautions
4. Exhaust warnings
5. Use ear and eye protection
6. DANGER risk for injury from cutter blade
7. Model designation SG1314A
8. Engine switch on the handle
9. Throttle
10. Handle adjustment
11. No step

SYMBOLS AND DECALS

Location of decals



Translation of instructions

Decal 3

Important information

Read and make sure you understand the Operator's Manual before use or maintenance.

To obtain a replacement manual, please contact your dealer.

Observe all safety instructions; otherwise you may injure yourself or others around you.

Make sure that the machine is in serviceable condition prior to use.

Stop the engine and wait until all machine movement comes to a standstill before service, adjustment or cleaning.

Do not run the engine in poorly ventilated spaces.

Make sure nobody is in the vicinity of the machine before starting and during use.

Avoid slopes that are too steep to use the machine safely.

Clear any debris prior to use.

Decal 4

Warning

Engine exhaust, some of its constituents and certain vehicle components contain or emit chemicals considered by the Sate of California to cause cancer, birth defects or other reproductive harm. The engine emits carbon monoxide, which is a colorless, poisonous gas. **DO NOT** use the machine in enclosed spaces.

Decal 5

Wear goggles or safety glasses and ear protections when using the unit.

Decal 6

There is DANGER to your feet from the cutting blades.

Decal 8

O = off, I = on

Decal 9

Rabbit = Fast engage clutch.
Turtle = Slow disengage clutch.

Decal 10

Handle adjustment.

Decal 11

No step.

SAFETY INSTRUCTIONS

General use

The object of this manual is to help you use your BlueBird machine safely and to give you information about how to maintain your machine. Please read the manual carefully before attempting to use the machine.

If after reading the operator's manual you are still unsure about the safety risks associated with use of the machine, you should not use the machine. Please contact your dealer for more information.

These safety instructions only address the basics for safe use. It would be impossible in the safety instructions to describe all possible risk situations that could arise when using the machine. You can, however, prevent accidents by always using common sense.

To obtain extra copies of the operator's manual, please contact your dealer.

IMPORTANT INFORMATION

Do not use the machine until you have read the operator's manual carefully and understand the instructions given. All maintenance work or adjustments not described in this manual must be performed by an authorized BlueBird service workshop.

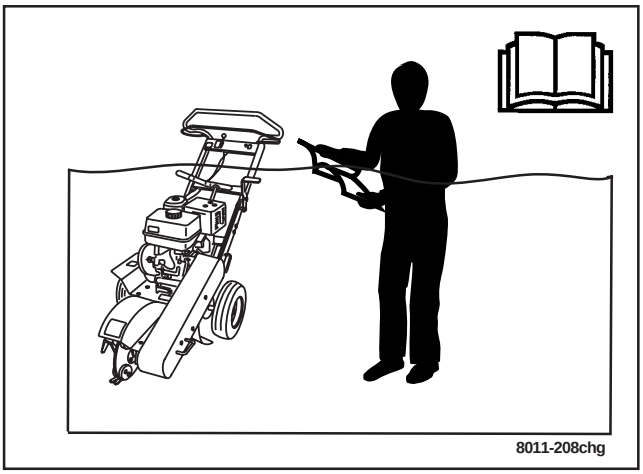
WARNING!

Under no circumstances may the original design of the machine be modified without written approval from the manufacturer. Such modifications not only affect the performance and durability of the machine but may even pose a safety risk for users and those in the vicinity. Unauthorized modifications to the design of the machine may absolve the manufacturer from liability for any resulting personal injury or property damage. Modifying the machine without written approval from the manufacturer may void the guarantee.

WARNING!

The stump grinder can be dangerous if used improperly or with out due care and can lead to serious accidents, in the worst cases even fatal accidents. It is very important that you read this operator's manual and understand the instructions before you attempt to use the machine.

- Read this manual carefully and make sure you understand it before using the machine or performing any maintenance. If the user cannot read this manual, it is the responsibility of the machine owner to explain the contents to the user.



Read this manual carefully before starting the machine.

SAFETY INSTRUCTIONS

- Follow all safety instructions. Failure to do so may result in injury to yourself or others.
- Accident prevention regulations, other general safety regulations, occupational safety rules and traffic regulations must be followed without fail.
- All users shall be trained in use of the machine. The owner is responsible for training users.
- Engage an authorized BlueBird workshop for all service and repairs not described in this manual.
- BlueBird original spare parts are designed and specified to maintain high quality and correct fit for optimal durability and life-span. From a safety point of view, you should only use BlueBird original spare parts.
- Learn how to use the machine and its controls safely and learn to recognize the safety decals.
- Only use the machine for removing tree stumps. It is not intended for any other use.
- Check that the machine is in serviceable condition prior to use; see the chapter ”Maintenance/Maintenance schedule”.
- Only use the machine in daylight or in other well-lit conditions. Keep the machine a safe distance from holes or other irregularities in the ground. Pay attention to other possible risks.
- Only allow the machine to be used by adults who are familiar with its use.
- Never allow children or persons not trained in the use of the machine to use or service it. Local laws may regulate the age of the user.
- People and animals can distract you causing you to lose control of the machine. For this reason, you should always concentrate and focus on the task at hand.
- Never leave the machine unsupervised with the engine running.
- Make sure that other people are nearby when you are using the machine so that you can call for help should an emergency arise.
- The machine is tested and approved only with the equipment originally provided or recommended by the manufacturer.

WARNING!

The engine can become very hot. To avoid being burned, you must turn off the engine and wait until all parts have cooled before touching the engine.

WARNING!

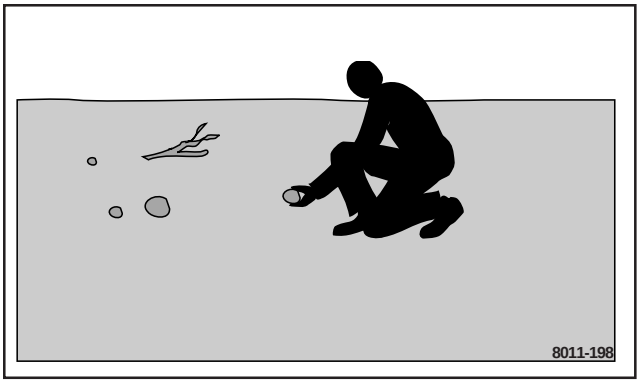
Overexposure to vibration may lead to circulatory or nerve damage, particularly in people who have impaired circulation. Contact your doctor if you experience symptoms that could have been caused by overexposure to vibration. Examples of common symptoms include numbness, pain, muscle weakness, change of skin color or an uncomfortable feeling of tingling. These symptoms appear most frequently in the fingers, hands or wrists.

IMPORTANT INFORMATION

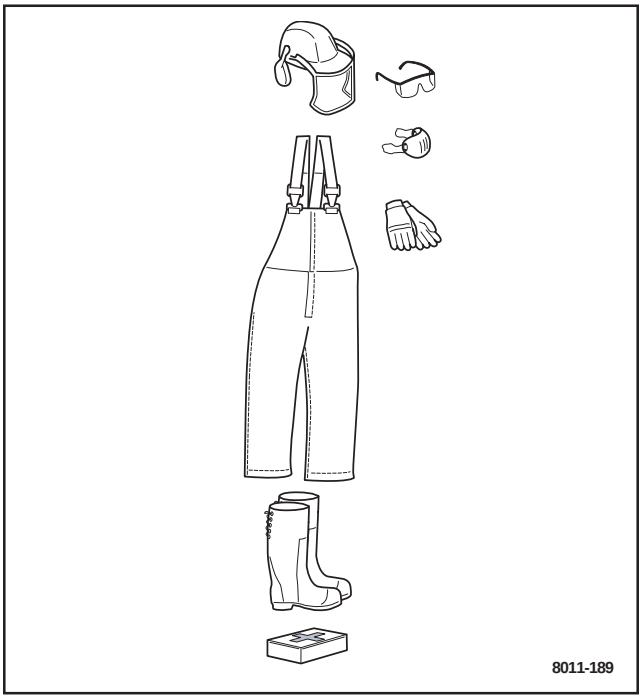
Never use a stump grinder that is damaged or incorrectly adjusted. Never use the stump grinder if any component is missing or if it is not properly assembled. Check that the cutting tools stop rotating when you reduce the throttle. If you find yourself in a situation where you are not sure what to do, always seek expert assistance. DO NOT try to attack any problem you are not qualified to resolve.

Preparations

- Make sure that you always have first aid equipment at hand when using the machine.
- Make sure nobody else is in the vicinity of the machine when you start the engine, engage the drive or run the machine.
- Make sure animals and people maintain a safe distance from the machine.
- Clear the area of objects such as stones, toys, steel wire, etc. that could become caught in moving machine parts and thrown out.
- Find and locate all fixed objects in the ground, such as sprinkler systems, poles, water valves, bases for washing lines, etc. Be certain to check for hidden electrical cables or similar in the surface of the lawn. Always run the machine around these objects. Never intentionally run the machine over foreign objects.
- Check that the dead man's grip and all guards are fitted and functioning. **DO NOT** use the machine if it is not working properly.
- Makes sure no clothing, long hair or jewelry can catch in moving machine parts.
- Check that all safety decals are in place. See the chapter "Location of decals".
- Use mouth protection, protective gloves with good grip and protective clothing which you can move unrestricted. Also use leg protection to protect your legs from sparks and the cutting tools.
- Never use the machine when barefoot. Always wear protective shoes or protective boots with anti-slip and preferably with steel toes.
- Use a helmet with a full face visor or a mesh visor and protective glasses. Wear approved ear-protection when running the machine. Ask your dealer about approved protective glasses, ear protection and recommended helmets.



Clear the work area before beginning work.



Use appropriate equipment.

WARNING!

Always use approved protective clothing and approved protective equipment when using the machine. Protective clothing and protective equipment cannot eliminate the risk of accidents, but wearing proper clothing and the correct equipment will reduce the degree of injury should an accident occur. Ask your dealer about approved protective clothing and approved protective equipment recommended by BlueBird.

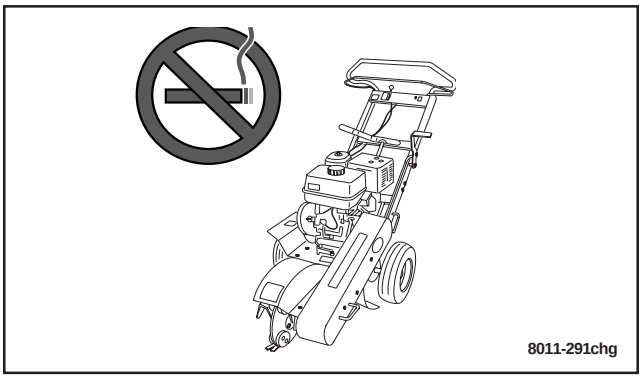
SAFETY INSTRUCTIONS

Operating

- **DO NOT** use the machine on grades of more than 10°.
- **DO NOT** use the machine if you are tired, if you have consumed alcohol, or if you are taking other drugs or medication that can affect your vision, judgment or coordination.
- Never use the machine indoors or in spaces lacking proper ventilation.
- Make sure you have a proper foothold when using the machine, particularly when backing. Walk, don't run. Never work on wet grass. Poor traction may cause you to slip.
- Keep your hands and feet away from moving parts.
- Keep your hands and feet away from the work tools.
- **DO NOT** use your feet or other parts of your body to gain greater bearing pressure against the stump.
- Smoking, open flames or sparks in the vicinity of the machine are **strictly** forbidden. Gasoline is extremely flammable and carelessness in handling can result in personal injury or fire.
- Never use a machine with a defective muffler.
- In very warm and dry climates, stump grinder operation poses a risk of forest fires.
- Stop and inspect the equipment if you run over or into anything. If necessary, make repairs before beginning again.
- Whatever happens, you should always park the machine on even ground, disengage the drive, activate the parking, turn off the engine and wait until all moving parts have stopped before leaving the operating position behind the machine.

The engine exhaust is poisonous. Never run the engine indoors.

Make sure you keep your hands and feet away from moving parts.



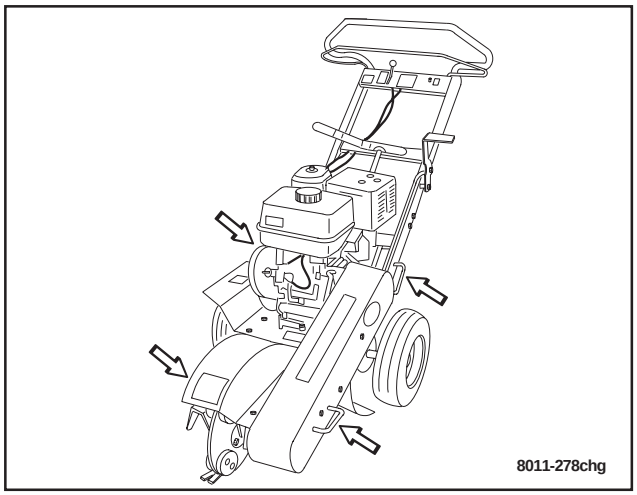
*Smoking near the machine is **strictly** prohibited.*

WARNING!

Engine exhaust, some of its constituents and certain vehicle components contain or emit chemicals considered to cause cancer, birth defects or other reproductive harm. The engine emits carbon monoxide, which is a colorless, poisonous gas. Do not use the machine in enclosed spaces.

Movement/Transport

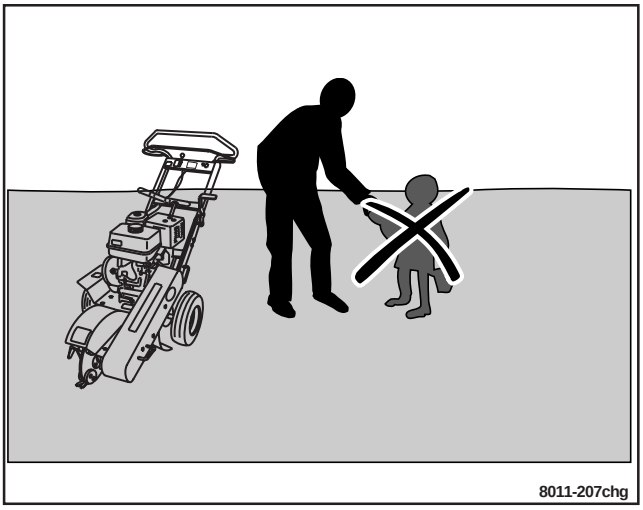
- To turn and steer the machine, press down on the handle and turn on the back wheels.
- Turn off the engine and allow it to cool at least 2 minutes before transport.
- Collapse the handle if the machine is equipped with a collapsible handle.
- Be careful and use safe lifting and moving techniques when loading/unloading the machine.
- We recommend having two people to lift the machine.
- Activate the parking brake during transport.
- Fasten the machine properly in place with approved fasteners, such as tension belts, chains or rope. Always check that you are in compliance with applicable traffic regulations before transporting the machine.



We recommend having two people lift the machine.

Storage

- Allow the engine to cool before storing the machine. Never store the machine near a open flame.
- Store the machine with the fuel valve closed.
- Store the machine and fuel in such a way that there is no risk that leaking fuel or fumes can come in contact with flames or sparks from electrical machines, electric engines, relays, switches, boilers or similar.
- Store the machine in a locked space away from children and adults untrained in use of the machine.

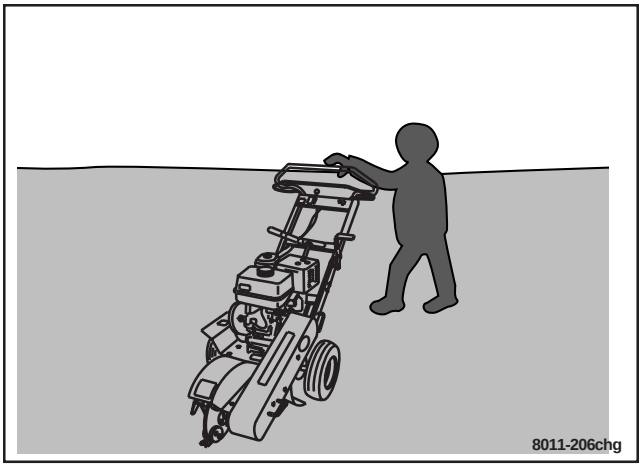


Keep children away from the machine.

Children

Serious accidents can occur if you fail to be on guard for children in the vicinity of the machine. Never assume that children will stay put where you last saw them.

- Keep children away from the machine.
- Keep children away from the work area and under close supervision by another adult.
- Keep an eye out and shut off the machine if children enter the work area.
- Never allow children to operate the machine.
- Be particularly careful near corners, bushes, trees or other objects that block your view.



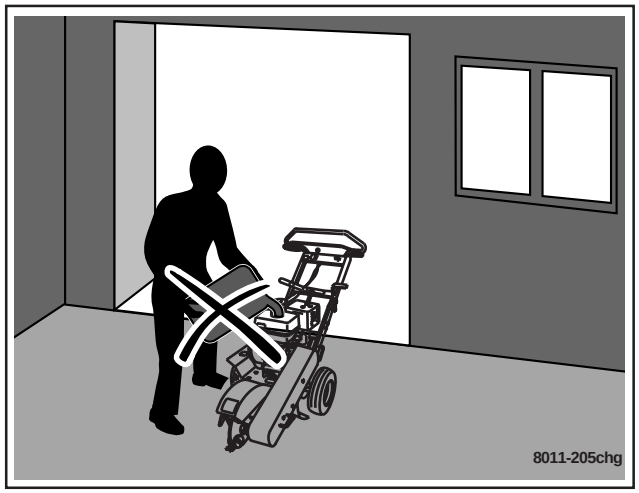
Never allow children to operate the machine.

Fuel system

WARNING!

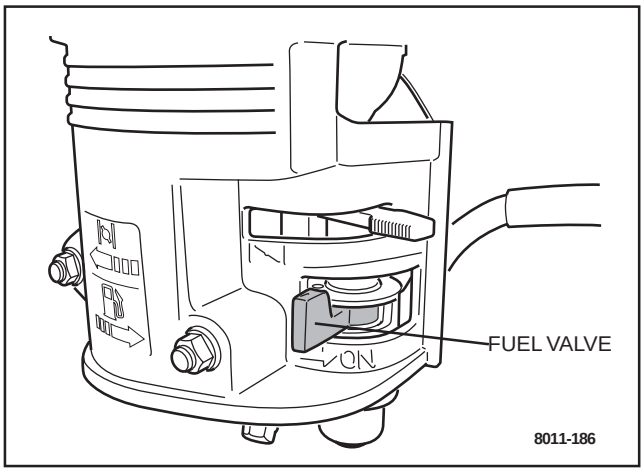
Gasoline and gasoline fumes are poisonous and extremely flammable. Be especially careful when handling gasoline, as carelessness can result in personal injury or fire.

- Only store fuel in containers approved for that purpose.
- Never remove the fuel cap and fill the fuel tank when the engine is running.
- Always stop the engine when refueling.
- Do not smoke when filling the gasoline tank and do not pour gasoline in the vicinity of sparks or open flame.
- Never fill the fuel tank indoors.



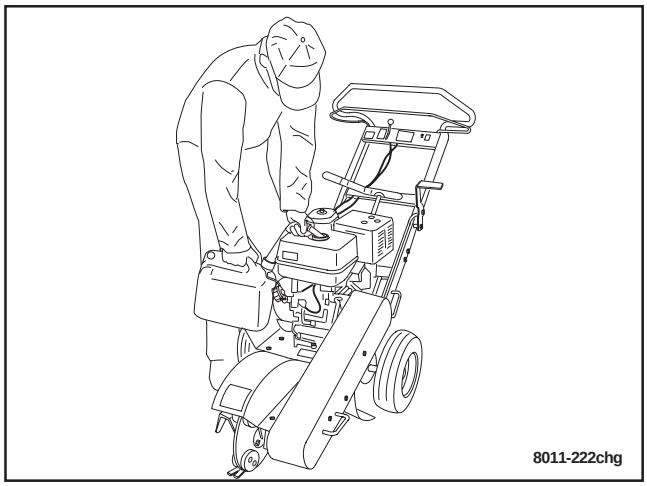
Never fill the fuel tank indoors.

- Before starting the machine after refueling, it should be moved at least 10 feet (3 M) from the location where it was filled.
- Turn off the fuel supply for storage or transport.
- If leaks arise in the fuel system, the engine must not be started until the problem has been resolved.



Close the fuel valve.

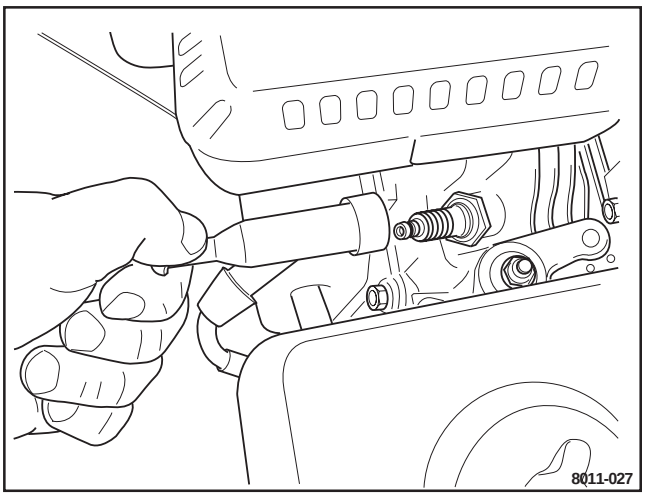
- Check the fuel level before each use and leave space for the fuel to expand, because the heat from the engine and the sun can otherwise cause the fuel to expand and overflow.
- Avoid overfilling. If you spill gasoline on the machine, wipe up the spill and wait until it has evaporated before starting the engine. If you spill gasoline on your clothing, change your clothing.



Fueling always poses an element of risk.

Maintenance

- Never make adjustments with the engine running.
- Disengage the drive units, shut off the engine and wait until all moving parts come to a complete stop before making adjustments, performing maintenance or cleaning the machine.
- Disconnect the spark plug cable before beginning repair work.
- Keep all components in serviceable condition and make sure all nuts, bolts, etc. are tight. Replace worn or damaged decals.
- Be careful when checking work tools. Use gloves when performing maintenance work.
- Never allow persons not trained in the use of the machine to perform service on it.
- Always park the machine on even ground before performing maintenance or making adjustments.
- Do not disassemble the engine. This can invalidate your engine warranty. Contact your dealer if you have any questions regarding service or guarantee matters. Follow all maintenance instructions.
- Do not change the setting of governors and avoid running the engine with overly high RPM. If you run the engine too fast, you risk damaging the machine components.
- Do not modify safety equipment. Check regularly to be sure it works properly. The machine must not be run with defective or disassembled safety equipment.
- The muffler is designed to maintain sound levels at an approved level and keep direct exhaust away from the user. Exhaust gases from the engine are extremely hot and may contain sparks that can cause fires or burn the user.
- Never use a machine with a defective muffler.
- Reduce the risk of fire by removing grass, leaves and other debris that may have caught in the machine.

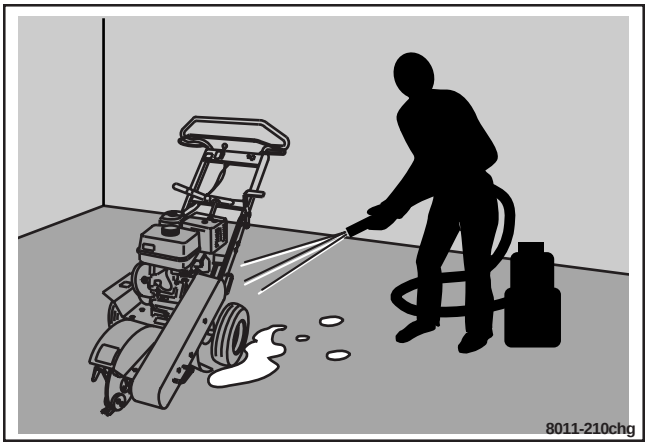


Remove the spark plug cable.

WARNING!

Wait until all moving parts are completely still before performing maintenance on the machine.

Turn off the engine and remove the spark plug cable.



Keep the machine clean.

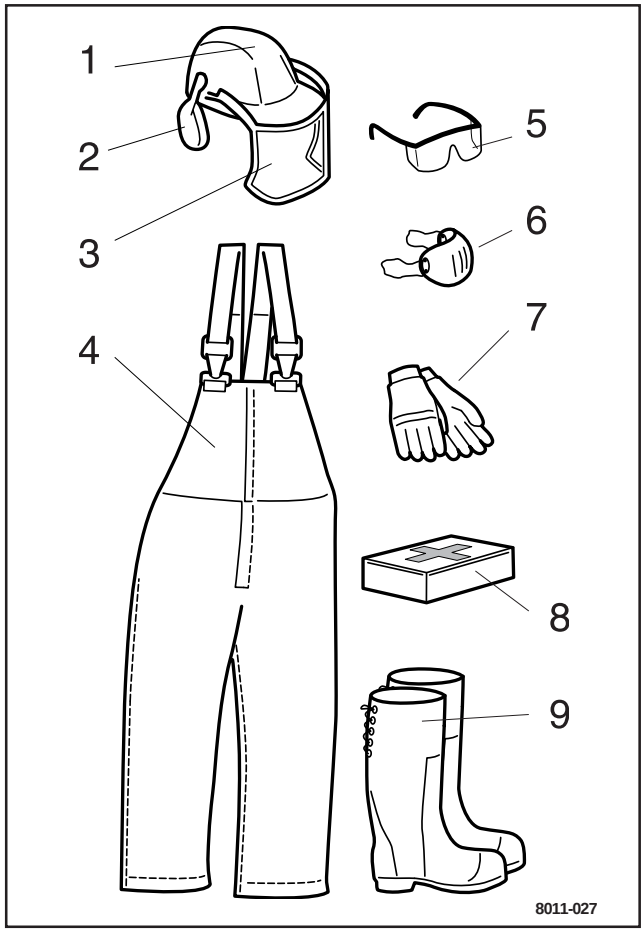
PROTECTIVE EQUIPMENT

Personal equipment

Consult your BlueBird dealer when selecting protective equipment. Our dealers have a broad assortment of equipment for professionals such as forestry workers and knowledge about occupational environment requirements and protective levels.

Before using the stump grinder, you may in many cases need to cut back the object with a power saw. Hence, it is appropriate to use personal protective equipment that fulfils requirements for working with both stump grinders and power saws.

The main difference is that you should wear protective glasses when operating the stump grinder while the wire mesh visor gives sufficient protection when using a power saw. Thus when using the stump grinder, we recommend using both a wire mesh visor to protect your face and protective glasses. Alternatively, you can use a Plexiglas face guard, but it scratches more easily and is more susceptible to soiling and fogging.



You require the following personal protective equipment:

1. Protective helmet (hard hat)
2. Ear protection
3. Face guard
4. Protective trousers
5. Protective glasses
6. Breathing protection (risk of dusty work environment)
7. Protective gloves
8. First aid kit
9. Protective boots or steel-toed shoes

SET-UP

Equipment set-up

1. Remove crate top and sides.
2. Remove upper handle bar assembly and lay aside.
3. Open bag containing loose hardware.
4. Using four (4) screws, flat washers and nuts attach the upper handle bar assembly to lower handle bar assembly. See Figure 1.

NOTE: Handle fit is tight. When aligning holes use a tapered type pilot to help align holes (i.e. punch or phillips style screw driver).

5. Attach the position adjusting rod to bracket on the lower and upper handle bar assemblies. See Figure 1.

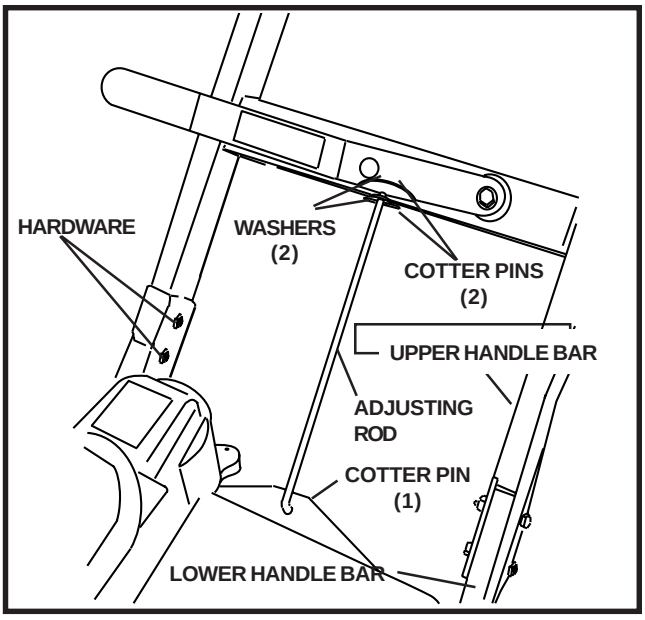


FIGURE 1

6. Assemble the compression spring, two (2) flat washers and yoke to brake rod assembly. See Figure 2. Screw yoke onto the rod assembly till rod is even or thru threaded portion of yoke about 1/4" (6.35 mm).

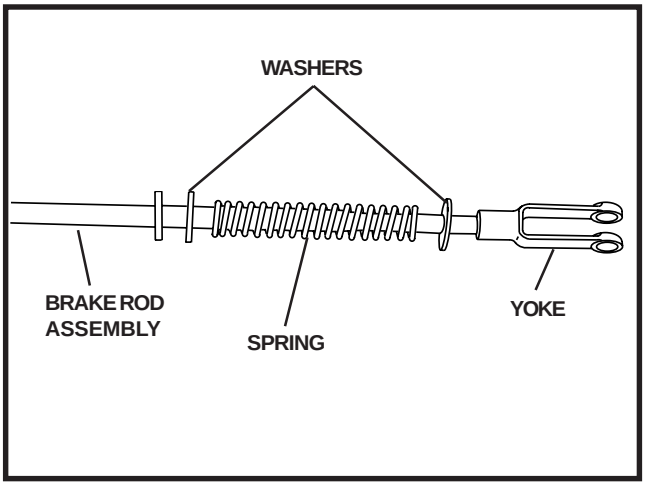


FIGURE 2

7. Attach brake rod assembly to brake handle on the upper handle bar assembly. See Figure 3.

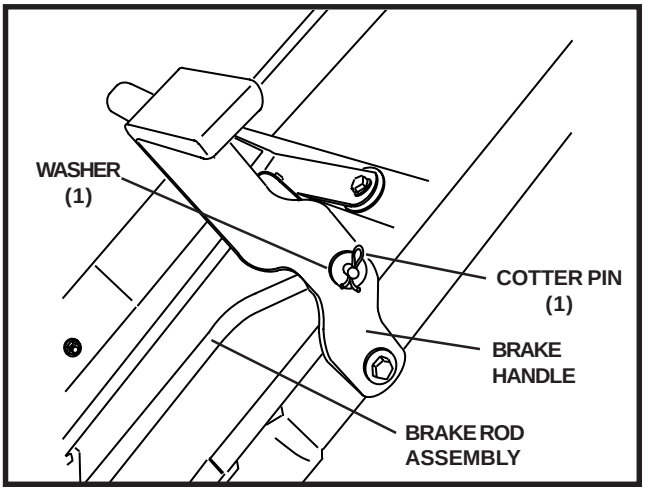


FIGURE 3

8. Attach the yoke to the brake's top mounting hole using the clevis pin and cotter pin. Make sure the rod is positioned in the bracket as shown in Figure 4.

NOTE: Adjust the brake before inserting hair pin. To engage brake, pull back on handle until brake rod assembly goes "over center" and locks the brake ON. Turning the yoke clockwise shortens the rod tightening the grip on the brake disc by the brake pads. counterclockwise loosens the clamping force. Proper brake adjustment is such that the wheel will not turn, but slide, when handle is over center.

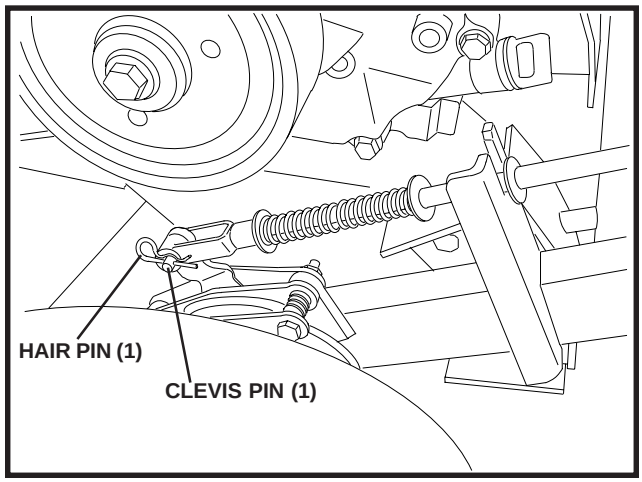


FIGURE 4

9. Remove air cleaner and double wire clamp from engine. Figure 5.

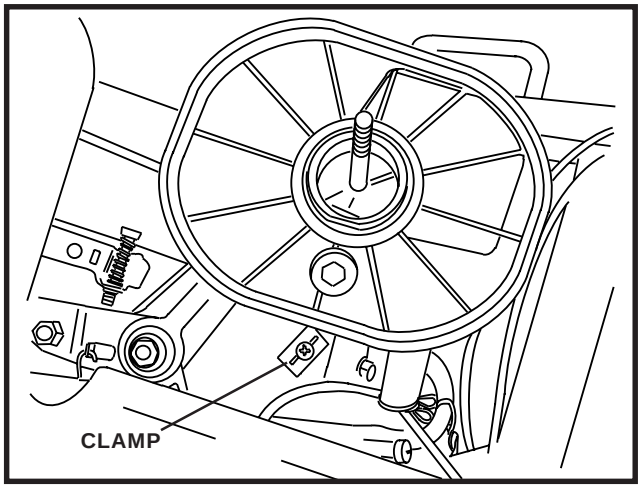


FIGURE 5

10. Route the wire harness from engine through guide and handle crossmember. Figure 6.

11. Route the throttle cable through guide on lower handle assembly. Figure 6.

12. Connect upper and lower wire harness together. Yellow to yellow and black to black.

13. Push throttle control lever on console forward to full extent. Pull throttle control lever on engine back as far as possible. See Figure 7.

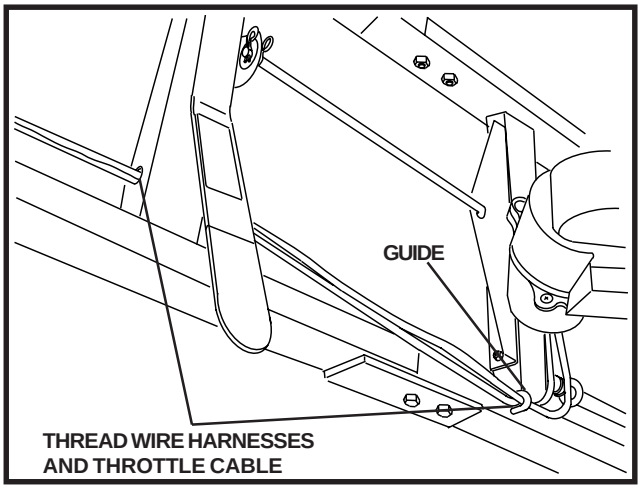


FIGURE 6

14. Insert "L" end of throttle cable into the outside hole of the engine throttle control lever. Figure 7.

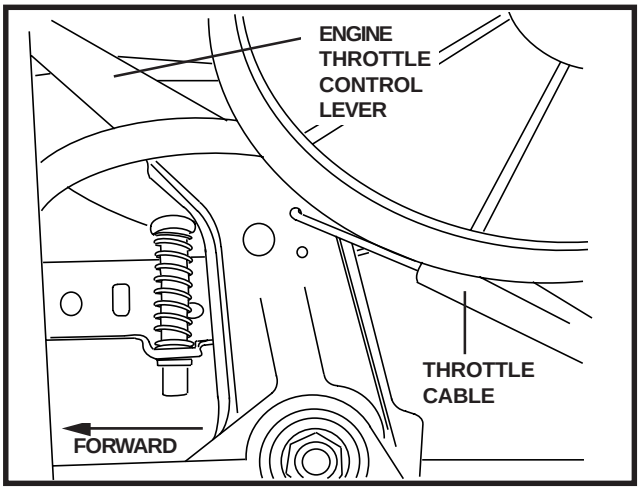


FIGURE 7

15. Attach the throttle cable to the engine using the double wire clamp removed in step nine. Figure 8.
16. Test throttle control by pulling back throttle handle on console. Throttle arm on engine should be pushed completely forward. Cable should not slip in clamp when doing this test.
17. Test proper wire length by pulling on the handle adjustment lever and raising and lowering the handle to maximum position without any pull on harness.
18. Reattach air cleaner to engine.
19. Unit is now ready to be removed from pallet.

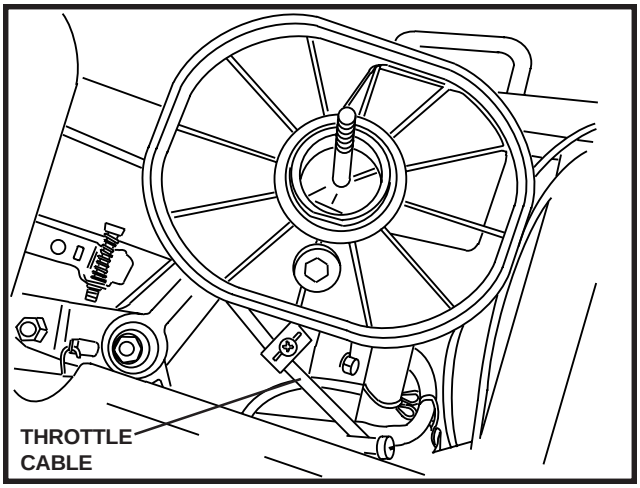


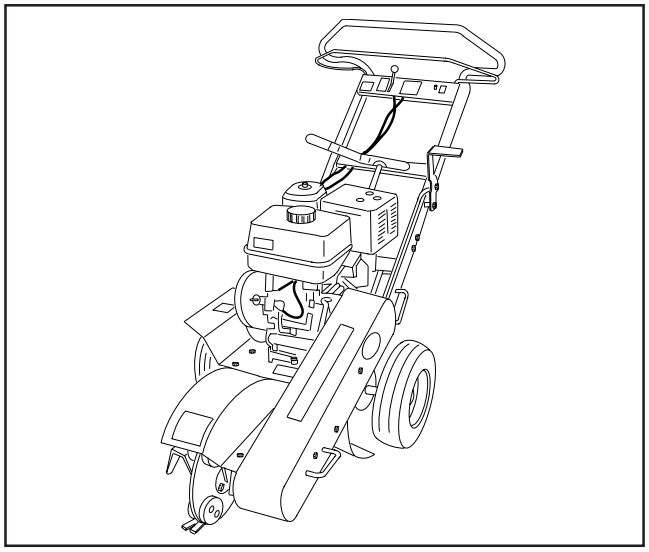
FIGURE 8

CONTROLS

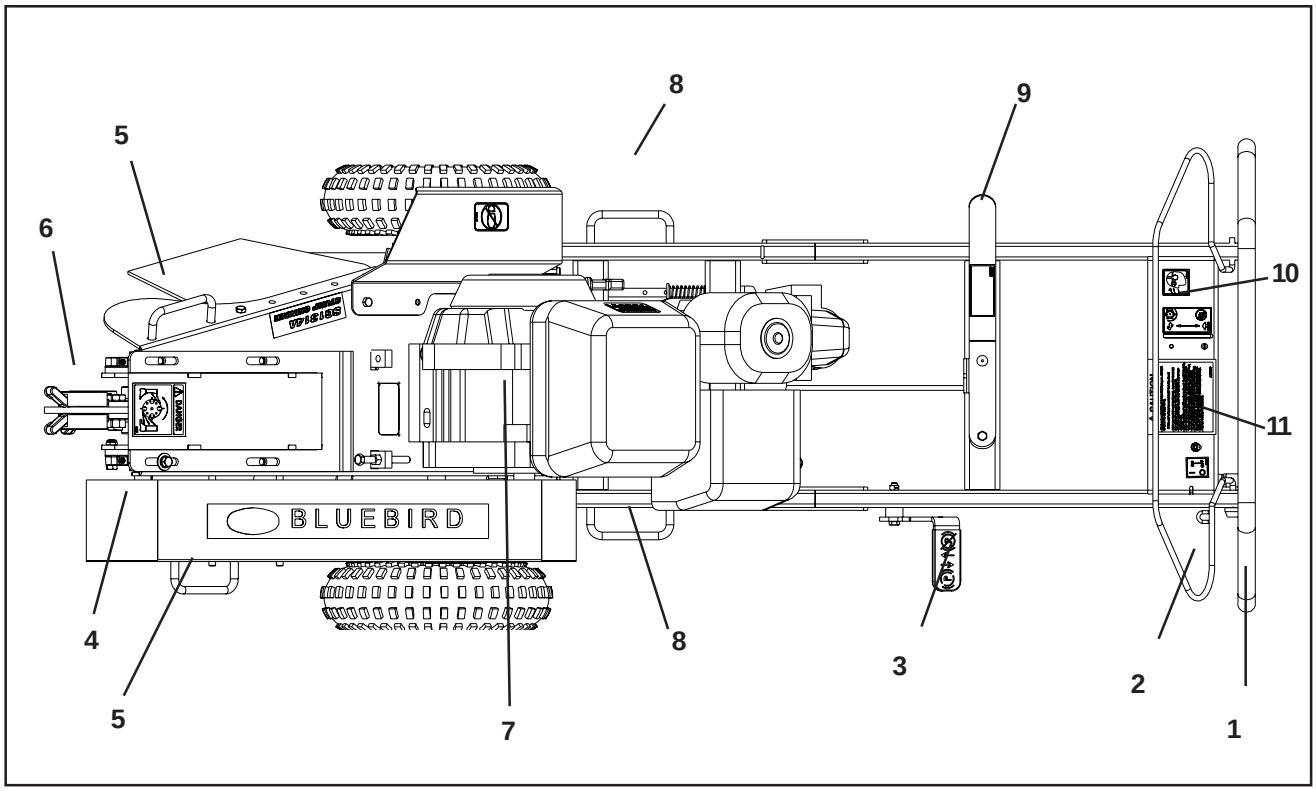
Presentation

Congratulations on your choice of an exceptionally high quality product. This operator's manual describes the BlueBird stump grinder.

The machine is equipped with a 13 hp Honda four-cycle engine.



Main components and operating controls

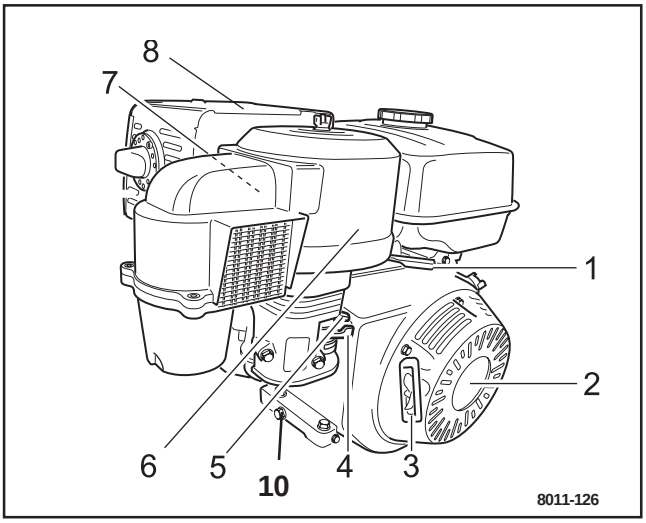


1. Handle
2. Dead man's grip bar
3. Brake lever
4. Belt guard for the cutter drive
5. Front lifting handle
6. Cutting wheel
7. Engine
8. Rear lifting handle
9. Adjustment bar for the handle
10. Throttle
11. Engine switch

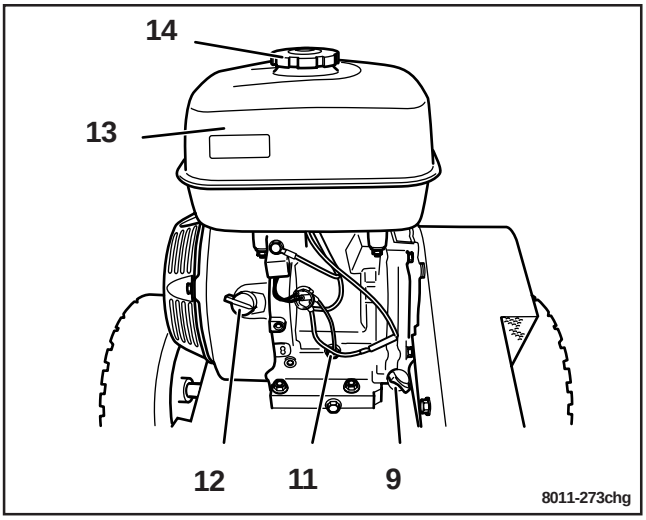
CONTROLS

Engine

Exterior engine components and controls.

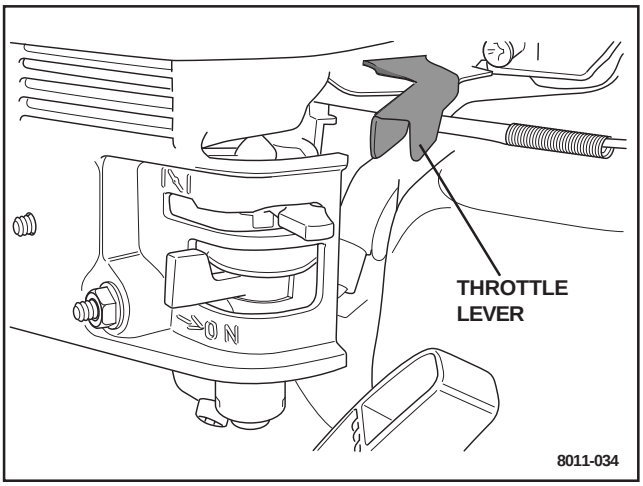


1. Throttle
2. Starter
3. Starter handle
4. Fuel valve
5. Choke control
6. Air filter
7. Spark plug
8. Muffler
9. Oil dipstick
10. Oil drainage
11. Oil level guard
12. Engine switch - disconnected use switch on handle bar
13. Fuel tank
14. Fuel filler cap



Throttle

The lever on the engine is normally not used. It is connected to the throttle on the handle. If the cable should bind or break, you can reduce the throttle with the lever on the engine as an emergency measure to slow the engine speed to an idle and stop the cutting wheel.



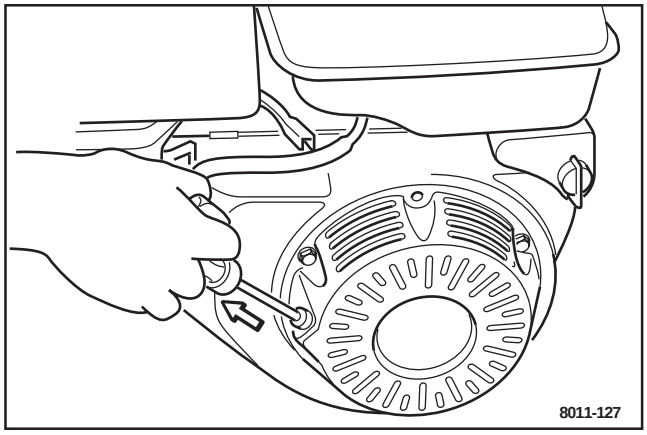
Starter

The starter is of the magnapull type with spring return. To replace the return spring or starter cord, contact an authorized service workshop.

Starter handle

Misuse of the starter handle can damage the starter. Do not twist the starter cord around your hand.

Pull out the handle slowly until the gears mesh. Do not pull out the starter cord completely and do not let go of the starter handle when extended.



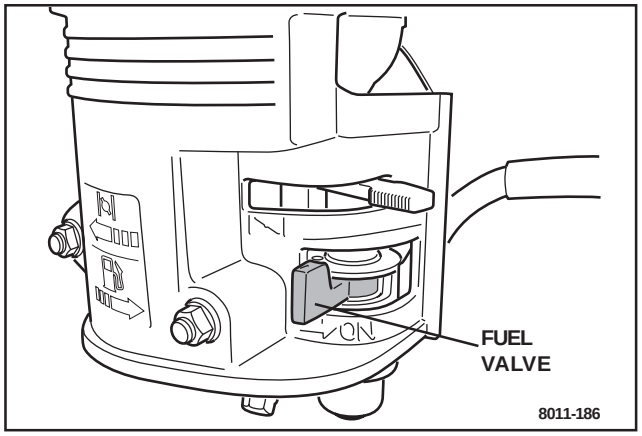
Fuel valve

The fuel valve opens and closes the connection between the tank and the carburetor.

The illustration shows the tank valve closed; to open, turn the lever completely to the right. There is no middle position.

Turn off the valve when the machine is not in use to avoid flooding the carburetor.

The fuel valve is combined with a sludge reservoir.

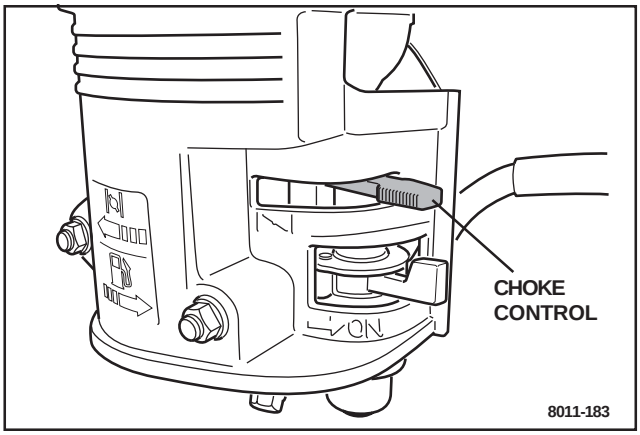


Choke control

The choke control opens and closes the choke valve in the carburetor. This is only used to start a cold engine.

The image shows the choke valve open; to close, move the lever to the left. The midway positions can be used. When the engine starts, the lever can be moved gradually to the right as long as it continues to run smoothly. Forgetting the choke is evident as the engine runs roughly and produces black smoke.

This also results in increased fuel consumption.



Air filter

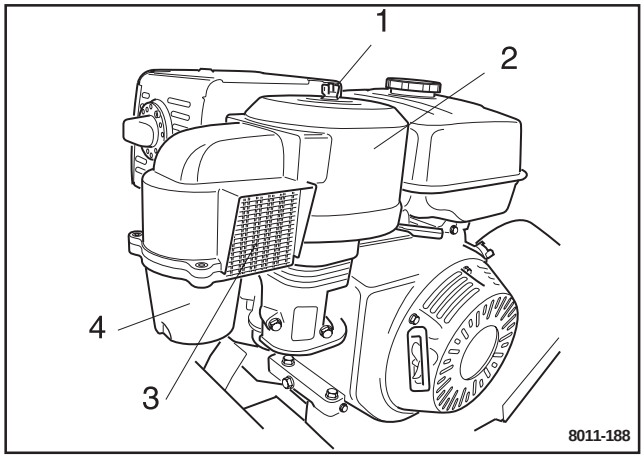
The engine air filter consists of a cyclone filter and a fine filter.

Air is drawn in through the screen (3) on the cyclone filter and coarser pollutants collect in the container (4).

The fine filter, which consists of a foam rubber pre-filter and a paper filter cartridge, is located under the cowling (2). The cowling and the cyclone filter can be removed by removing the wing nut (1).

See the chapter “Maintenance/Cleaning the cyclone filter and Replacing the air filter” for cleaning instructions.

Running the machine with a dirty air filter will cause the engine to run on partial choke and show the same symptoms as a forgotten choke described above. It can also be difficult to start.

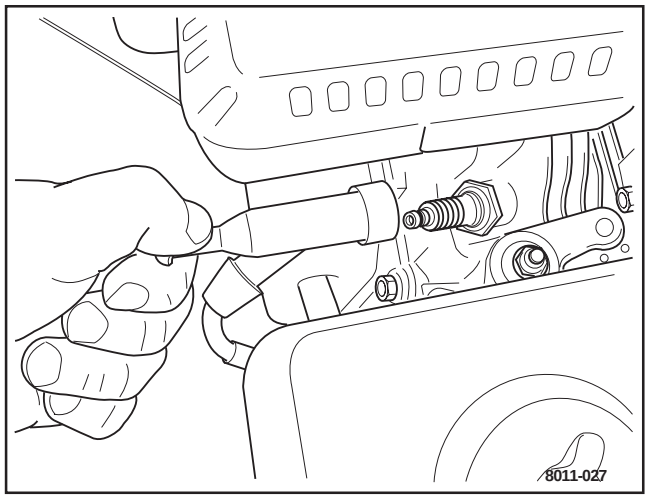


Spark plug

The engine spark plug is hidden under the ignition cable shoe. When performing service, it is important that the engine cannot start accidentally. For this reason, always remove the ignition cable shoe from the spark plug. To avoid pulling the cable, the cable shoe is equipped with a special handle; see the illustration.

Type of spark plug, see “Technical data”.

Service instructions, see “Maintenance/Electrical system”.



Muffler

The engine muffler is equipped with a heat protective cowling. Nonetheless, it still becomes hot when the engine is running. Avoid touching the muffler when it is warm. Risk for burns.

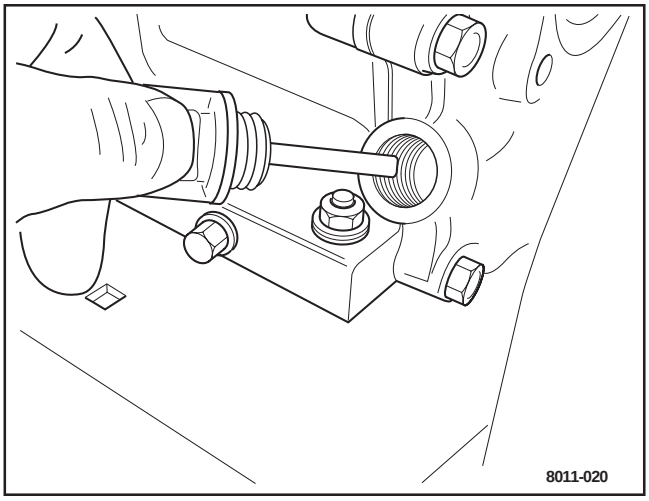
Oil dipstick

The dipstick for the crankcase oil reservoir is located on the front of the engine. Refill the engine oil in the hole where the dipstick fits.

When checking the oil level, the dipstick should **not**

be screwed in. The machine should be parked on even ground with the engine stopped. Never run the engine without the dipstick in place. The engine has an electronic oil level guard. It stops and cannot be started if the level becomes too low. Yet you should not rely entirely on the level guard; rather you should check the oil using the dipstick.

For normal use, we recommend SAE 10W-30 weight engine oil service SF-SG; see also the chapter “Lubrication/Engine oil”.

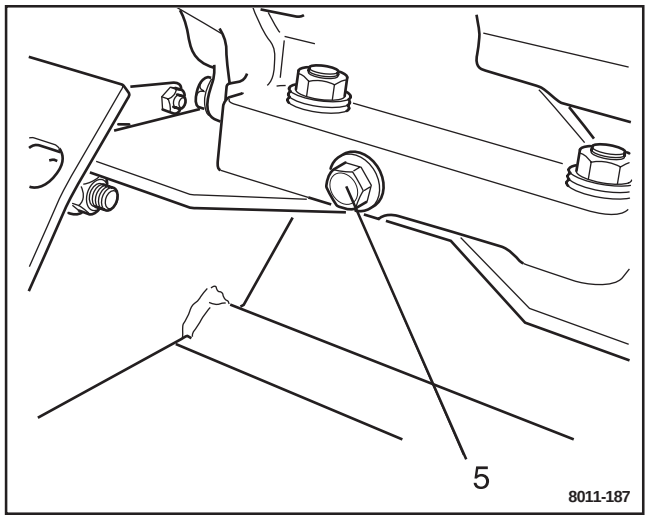


Oil drainage

The drainage screw (5) for the crankcase oil reservoir is located on the back of the engine.

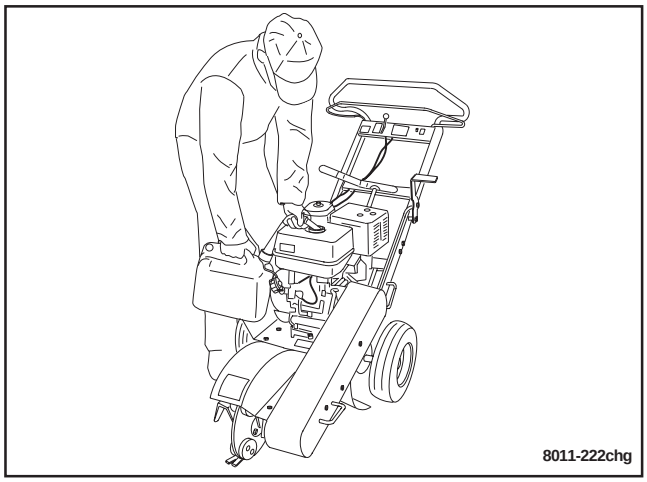
IMPORTANT INFORMATION

Used engine oil is a health hazard and legislation prohibits disposal on the ground or in nature; it should always be disposed of at a workshop or appropriate disposal location. Avoid skin contact; wash with soap and water in case of spills.



Fuel tank

Underneath the tank, there is a fuel filter combined with the fuel valve. The tank volume is 1.72 Gal. (6.5 liters)



Fueling

Read the safety instructions before fueling.

Keep the fuel and fuel tank clean. Avoid filling the machine with dirty fuel. Make sure the fuel cap is properly tightened and the gasket is not damaged, particularly before washing the machine.

Use unleaded gasoline with minimum 86 octane rating. Never use gasoline mixed with two-cycle oil. For ethanol and methanol fuel, the following applies:

Maximum allowable ethanol 10% (volume).

Maximum allowable methanol 5% (volume).

Maximum allowable MTBE (Methyl Tertiary Butyl Ether) 15% (volume).

If the engine “bolts” at normal load it can be damaged. Change the fuel. If this does not help, contact an authorized service workshop.

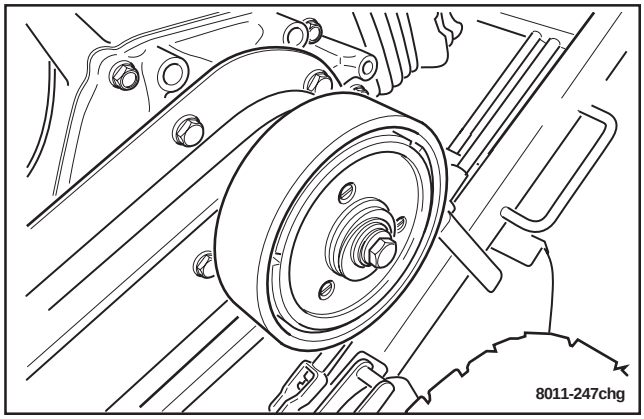
Do not fill the tank completely; leave space for the fuel to expand as it warms up.

WARNING!

Gasoline is highly flammable. Observe caution and fill the tank outdoors. (See the safety instructions.)

Centrifugal clutch

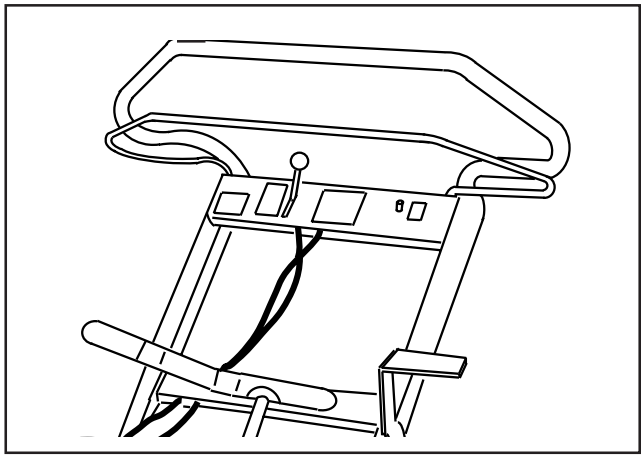
The engine is equipped with a centrifugal clutch that is connected to the crankshaft. When the engine speed increases, the drive for the cutting wheel engages automatically. The centrifugal clutch is maintenance-free; it is not possible for the user to make adjustments.



Cutting unit

Dead man’s grip bar

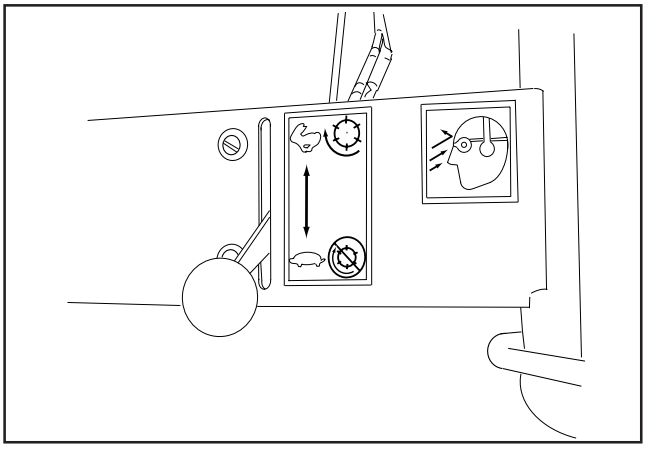
The bar must be held against the handle for the engine to run. If you release the grip, the ignition system short-circuits and the engine stops.



WARNING!

Do not bind the bar to the handle.

It is there for your safety.

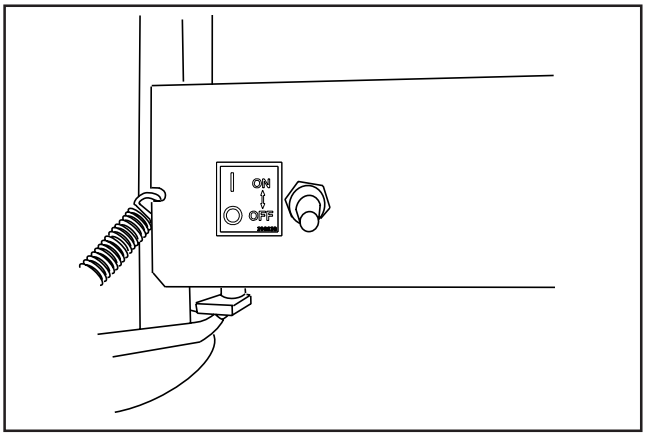


Throttle

The lever controls engine speed.

With the lever down, the engine runs at idle and functions as start position.

When the engine speed increases, the centrifugal clutch drive automatically engages the cutting wheel.



On/Off Engine switch on the panel

The ON/OFF engine switch can be used to stop the engine. The illustration shows the toggle switch in the OFF position (short circuited electrical system). There is another switch with the same function:

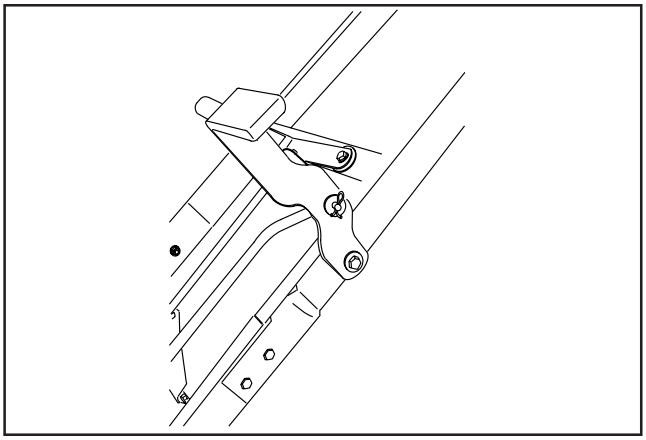
- The micro switch that is affected by the dead man's grip bar.

To start the engine, the switch must be first set to the ON position and the dead man's grip must be held in.

Brake

WARNING!

NEVER operate a machine with a defective brake.

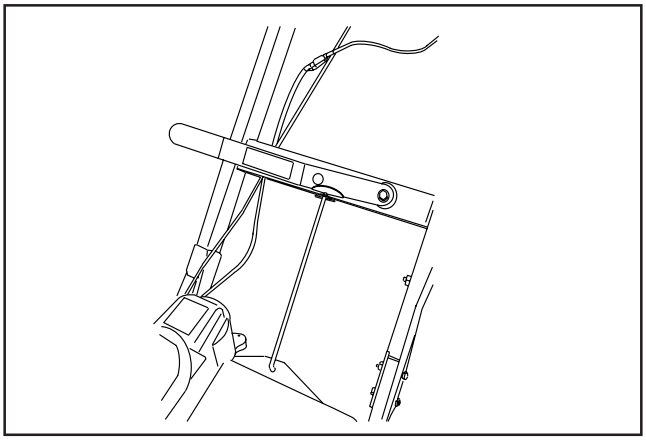


The lever activates a disk brake on the left wheel when it is pulled backwards. The brake should always be activated when operating the grinder, when it is parked and when it is being transported.

Adjustment bar for the handle

WARNING!

DO NOT pull out the adjustment bar when the cutting wheel is rotating. There is a great risk that you will lose control of the machine.



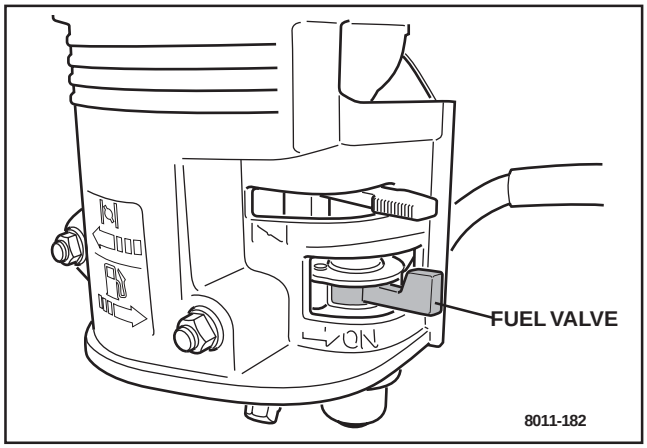
As the tree stump is ground away, the handle position will need to be adjusted. Pull the handle backwards and set the handle at a suitable working height. Engagement rods are spring loaded to insure positive locking when released, but always make sure bolts are locked into place after you make adjustments.

Starting the engine

Check that all daily maintenance as described in the maintenance schedule has been performed. Check that there is sufficient fuel in the tank.

Fuel valve

Open the fuel valve. Place the lever all the way to the right.

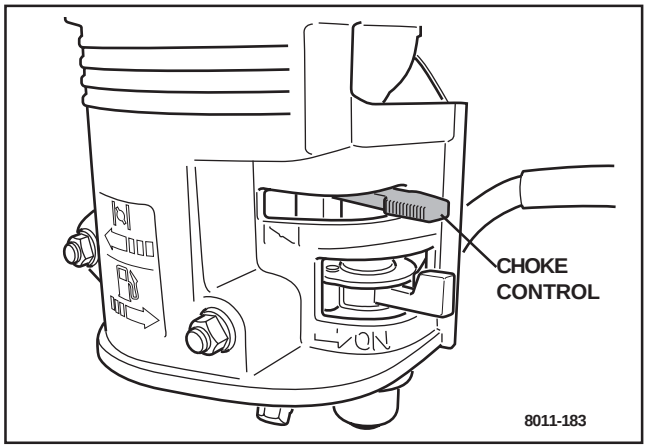


Choke control

When starting the engine warm, the lever should be in the right position; see the illustration.

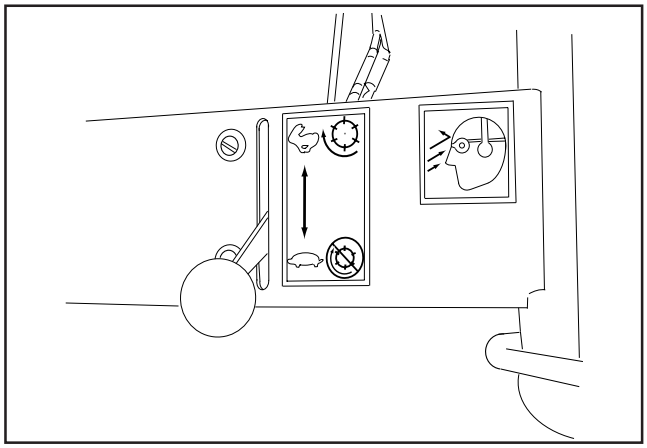
When starting the engine cold or partially warm, place the lever completely or partly to the left.

Move the lever back to the right once the engine starts. When the engine is cold, it may be best to move the lever back in several stages. Find the position where the engine runs smoothly.



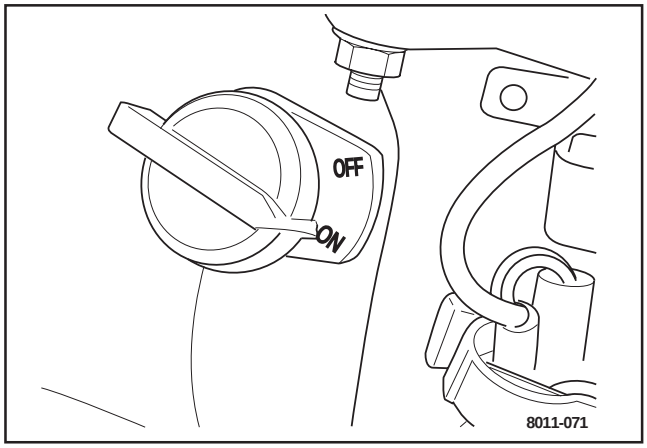
Throttle

Set the throttle on the handle to the SLOW(START)/ DISENGAGE position.



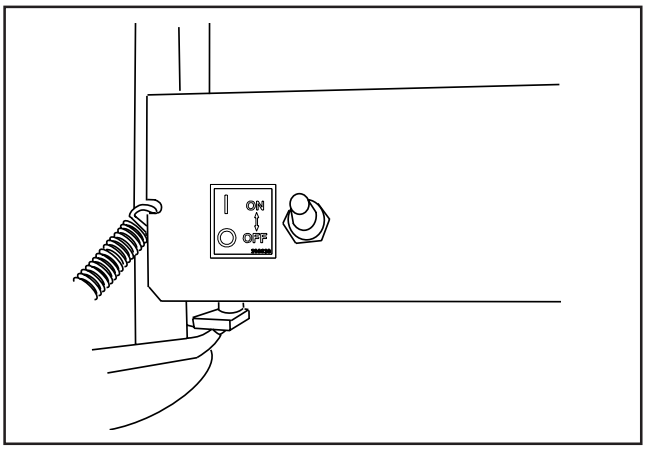
Engine switch on the engine

Swtich on engine is disconnected, use engine switch on handlebar.



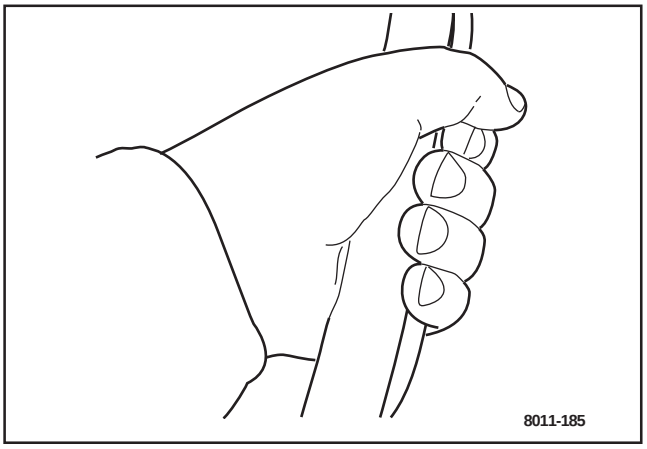
Engine switch on the handle

Set the toggle switch to ON.



Dead man's grip bar

Hold in the bar for the dead man's grip against the handle.

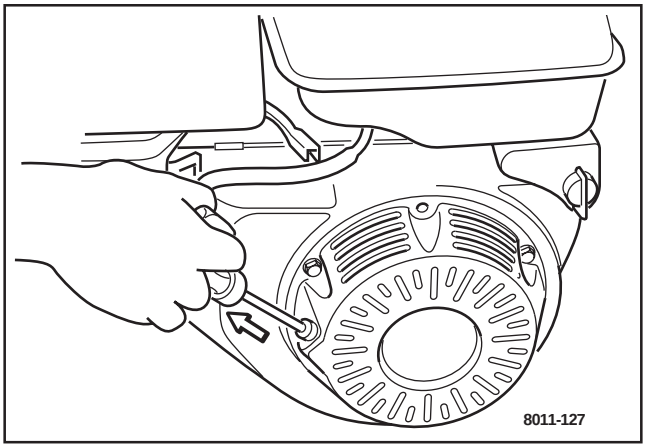


Starter handle

The dead man's grip must be pressed in when starting the engine.

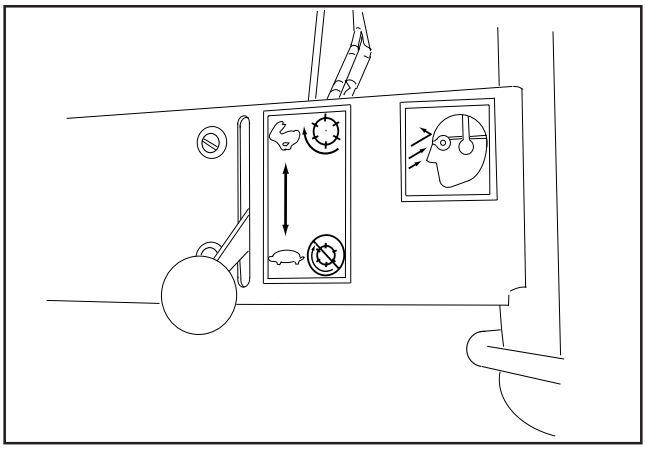
Misuse of the starter handle can damage the starter. DO NOT twist the starter cord around your hand.

Pull out the handle slowly until the gears mesh. Then give a sharp pull on the starter handle. DO NOT pull out the starter cord completely and DO NOT let go of the starter handle when extended.



Throttle

Keep the throttle at idle. When the throttle is increased, the cutting wheel will begin rotating.



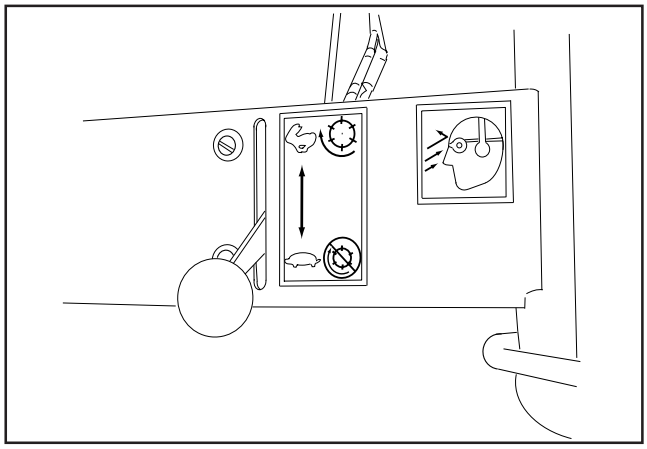
Normal shutdown

Throttle

Set the throttle to SLOW/DISENGAGE.

If the engine has been running full out, let it run easily for about 30 seconds to 1 minute at low speed.

DO NOT let front of unit touch ground until you are sure cutting wheel has stopped turning.

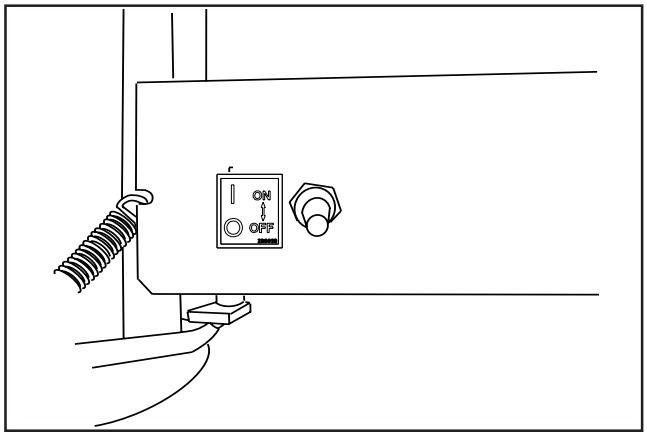


Engine switch

Wait at least 20 seconds, until the blade has stopped.

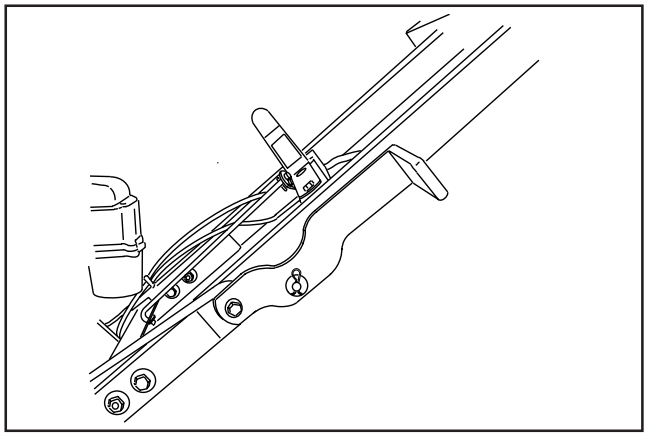
Set the toggle switch to OFF.

Make sure that the blade is resting against the ground and has stopped completely before doing anything.



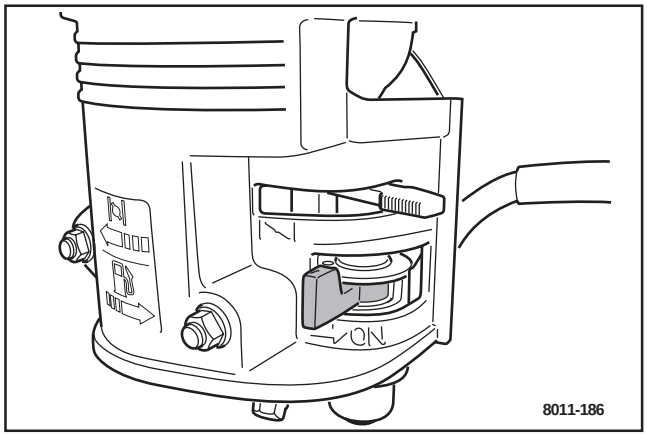
Brake

Activate the brake by pulling the lever backwards.



Fuel valve

Close the fuel valve. Turn the lever all the way to the left (see illustration).



Shutdown in emergency situations

Release the dead man's grip.

Wait until the blade stops.

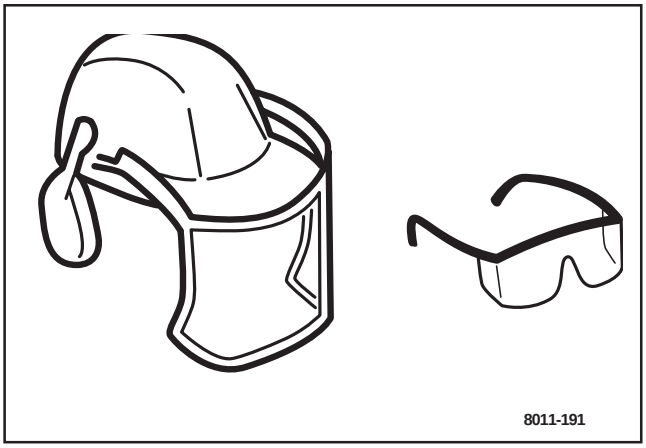
Make sure that the blade is resting against the ground and has stopped completely before doing anything.

Before you start

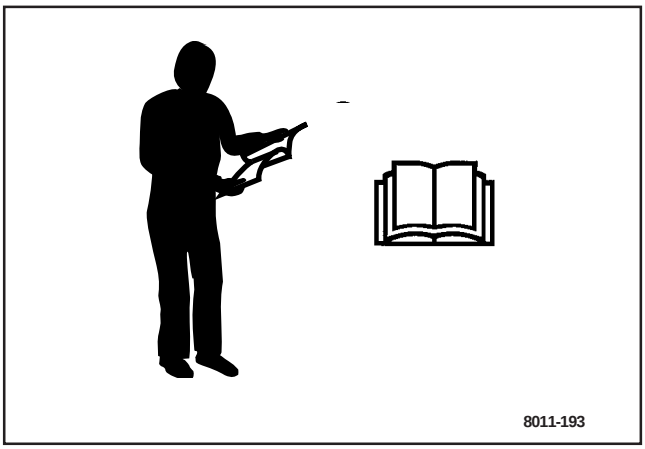
Dig away the earth and remove any stones near the tree stump that may interfere with your work. Check that the ground is free of foreign objects, such as electrical cables, barbed wire, etc.

Cut or trim the stump as necessary using a power saw.

- Review all of the machine's safety decals.



- Use a hard hat, ear and eye protection. A mesh visor alone does not provide sufficient eye protection; supplement with protective glasses.



- Make sure that you are familiar with safety regulations and shutdown procedures described previously in the operator's manual.
- Make sure that all guards are in place and in good condition.
- Make sure that the blades and cutters are in place and in good condition.

- Make sure that the work area and cutter in particular and free from metallic objects such as wire, nails, etc. that could be thrown out and injure persons in the vicinity and damage the equipment.
- Make sure that everyone, including children and animals, maintains a distance of at least 50 feet (15 M) from the machine. Debris can be thrown out and injure people and animals.

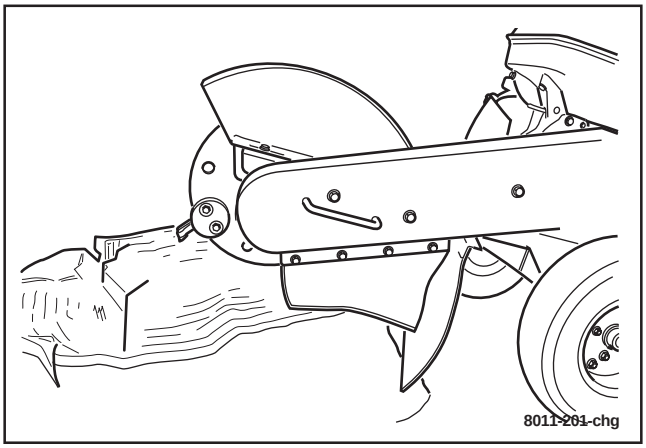
OPERATION

Using your stump grinder

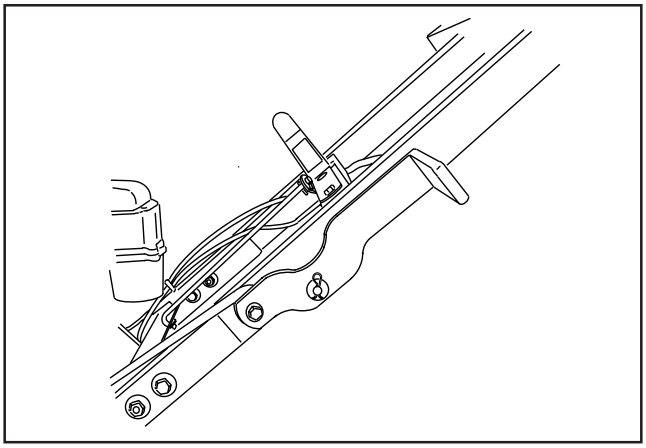
WARNING!

NEVER allow the blade to touch the ground until it has stopped turning.

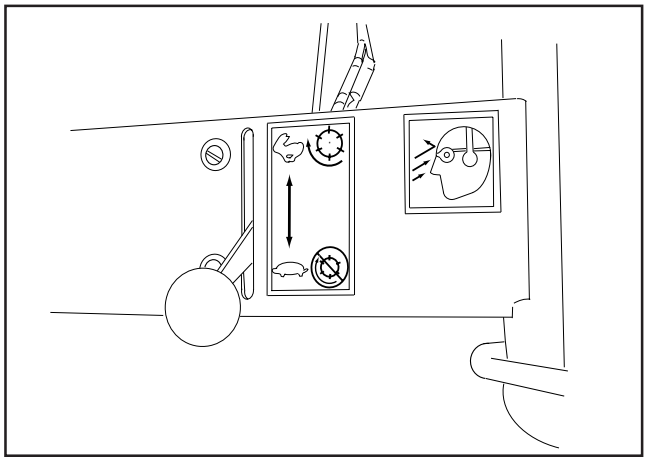
1. Place the cutting blade near the top front edge of the tree stump.



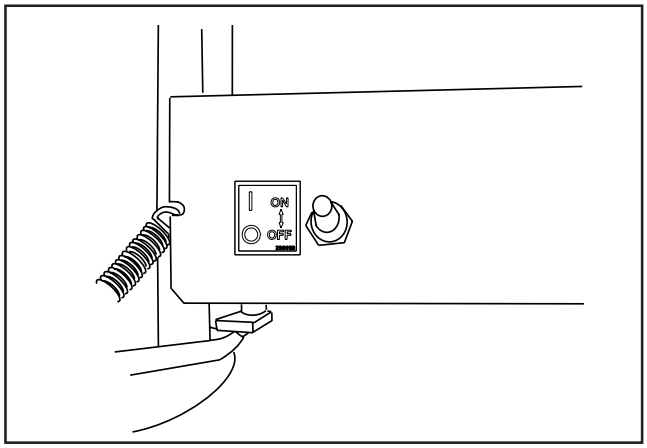
2. Set the brake to lock position.



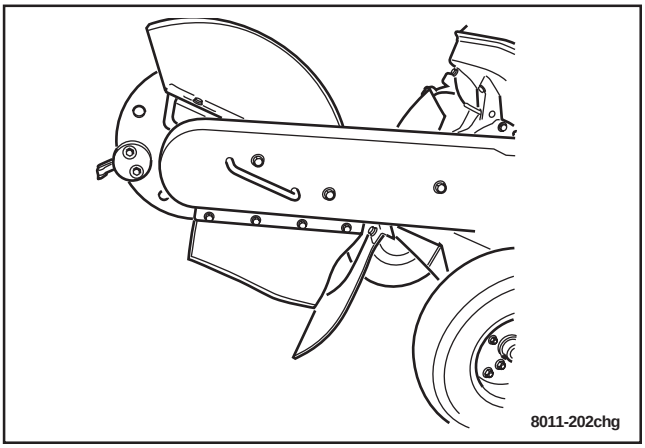
3. Set the throttle to SLOW (START) DISENGAGE.



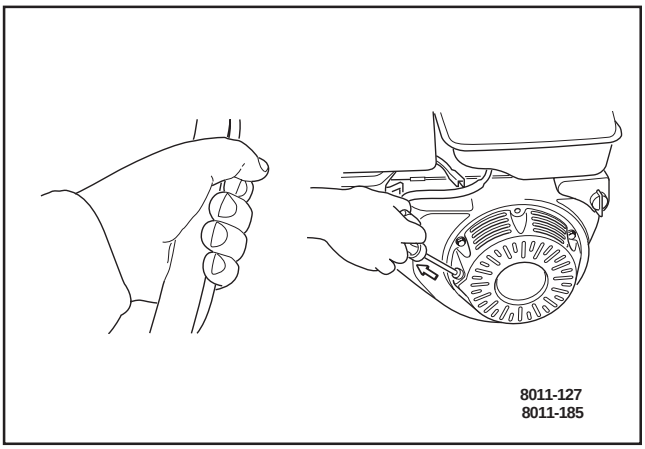
4. Set engine switch on handlebar to ON.



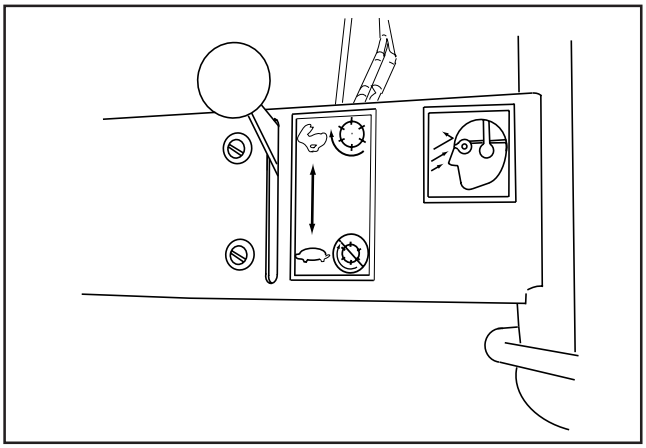
5. Tilt the machine on its wheels, lifting the cutting wheel off the ground.



6. Hold in the dead man's grip bar and start the engine.
7. Allow the engine to warm up for two minutes at idle before grinding.



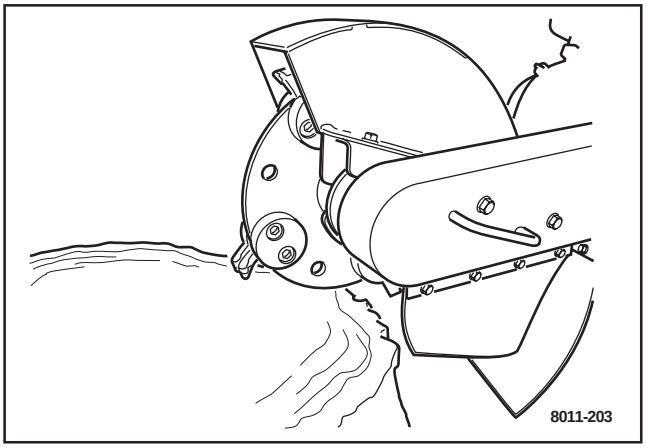
8. Set the throttle to FAST to ENGAGE clutch.



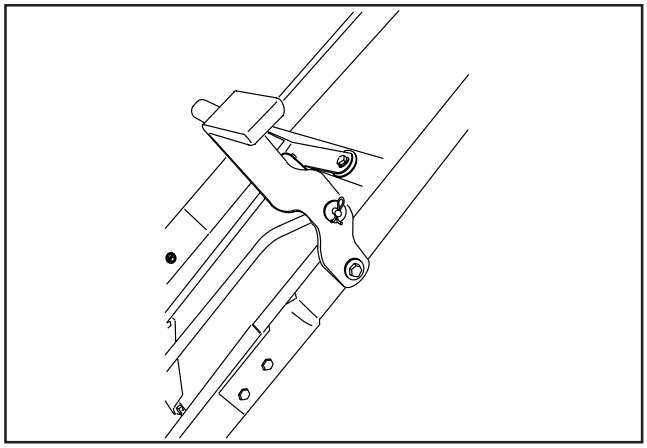
IMPORTANT INFORMATION

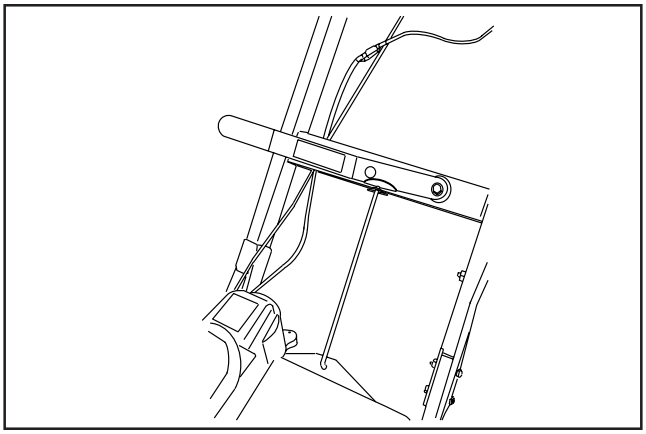
If the cutting wheel is too low, the machine may start to "climb" over the stump and become unstable.

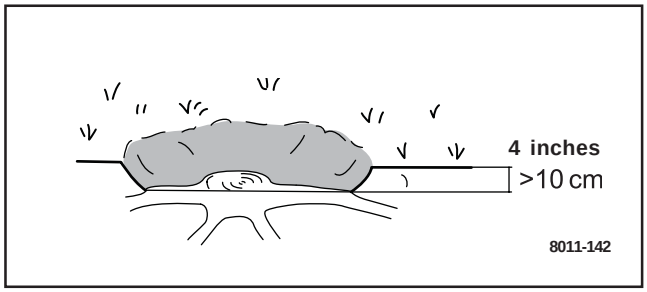
9. Place the middle of the cutting wheel approximately one inch (2.5 cm) above and 3/4 to 1 1/2 inches (2-4 cm) into the stump.
10. Place the cutting wheel in the upper front edge of the stump. Swing the cutting wheel from side to side while lowering it about one inch (2.5 cm) after each pass until the front edge of the stump is gone.



11. Before moving the machine forwards, you should ensure that the cutting wheel is above the ground and located on either side of the stump. Move the machine forward by releasing the brake, pushing it forward, activating the brake again and repeating steps 9 and 10.
12. Repeat steps 9 through 11 until the upper portion of the stump has been removed. DO NOT cut deeper than ground level at this stage.
13. Set the throttle to SLOW/(START) DISENGAGE and wait until the cutting wheel stops rotating.
14. Release the brake and pull the machine away from the stump.
15. It may be necessary to clear wood chips from the area around the stump.
16. If you want to grind below the ground level, it may become necessary to adjust the handle position to achieve a better hand and arm work position. Pull the handle control lever and adjust the handle to the desired position.
17. Repeat steps 6 through 10 until you reach the desired depth.
18. Shut off the machine when you are done.







Operating on hills

Be very careful when operating the stump grinder on hills because the machine can slip or move unexpectedly.

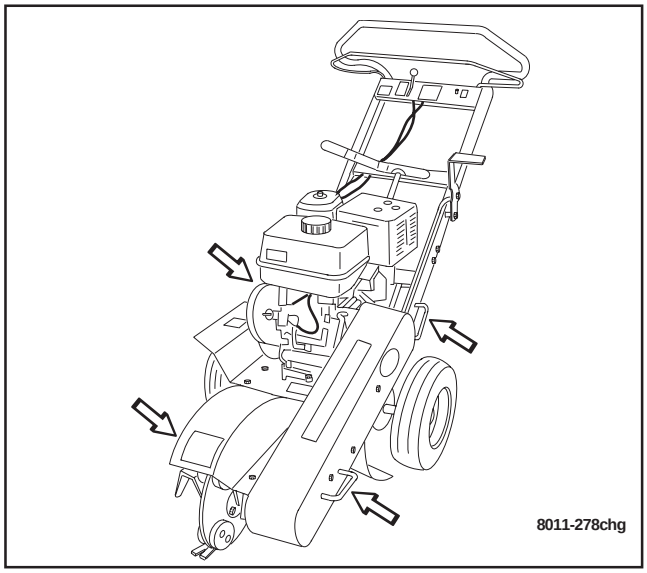
NEVER use the machine on grades of 10° or steeper.

Transport

The BlueBird stump grinder can be transported in a truck, trailer, van or a large SUV (Sport Utility Vehicle). The stump grinder is equipped with two lifting handles on each side so that two people can lift the machine if necessary.

DO NOT attempt to lift the machine alone. Use safe lifting techniques and DO NOT exceed your physical limitations.

Secure the machine with tensioning belts, chains or other approved materials.



The lifting handles can also be used to secure the machine for transport.

MAINTENANCE

Maintenance schedule

The following is a list of maintenance procedures that MUST be performed on the machine. For those points not described in this manual, visit an authorized service workshop.

		Maintenance interval months/hours				
Maintenance	**Daily**	**-/10**	**1/25**	**3/50**	**6/100**	**12/300**
Check the engine oil level	X					
Change engine oil [1)]						
Check the air filter	X					
Clean the air filter [2)]				X		
Replace air filter cartridge [2)]						X
Clean sludge reservoir for fuel system					X	
Check and clean the spark plug					X	
Replace the spark plug						X
Check engine switch function [3)]	X					
Check idle speed						X
Check and adjust play in valves [4)]						X
Clean fuel tank [4)]						X
Check, replace fuel lines as necessary [4, 5)]						X
Check throttle and cable [3)]	X					
Check blade and cutter [3)]	X					
Check decals and warning signs [3)]	X					
Check wear and tension on the belts [3)]	X					
Check the chassis, bolts and set screws		X				
Grease the blade bearings (use high tempera-	X					
ture grease such as Mobilith SHC 220 or equal)[6)]						
Grease the wheels (standard lithium base)				X		
Check tire air pressure (25 psi max)	X					

[1)]First change after 20 hours. [2)]In dusty conditions maintenance is required at shorter intervals.
[3)]Before each use. [4)]Performed by authorized service workshop. [5)]Performed every second year.
[6)]Grease every 4 hours.

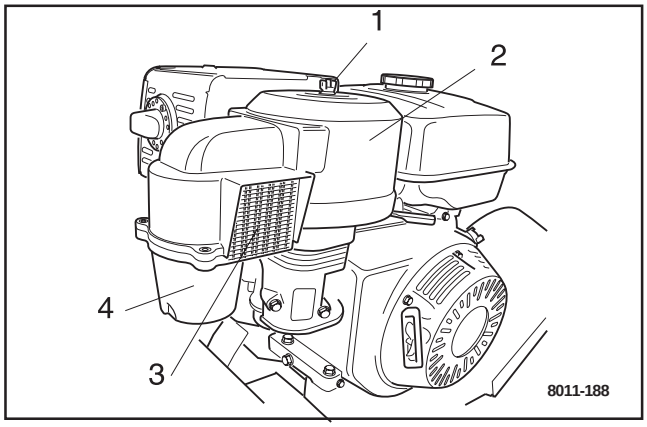
WARNING!

No service operations may be performed on the engine or unit unless:

- **The engine is stopped.**
- **The ignition cable has been removed from the spark plug.**
- **The machine is securely parked where it will not tip or begin rolling.**

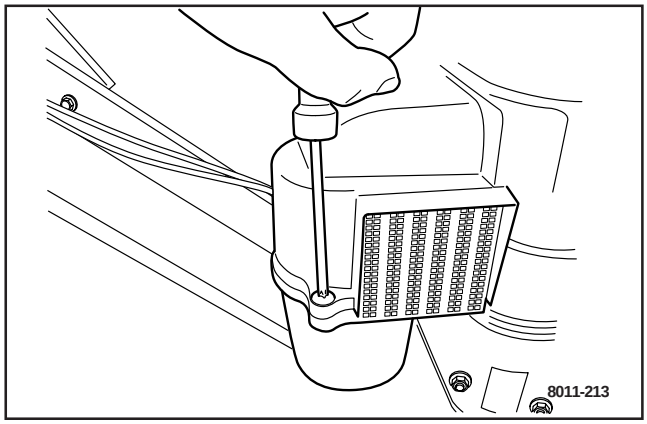
Cleaning the cyclone filter

The cyclone filter collects the largest contaminant particles, which collect in the container. When you can see a layer of dirt at the bottom of the container, the cyclone housing (4), air channels and air intake screen (3) must be cleaned.

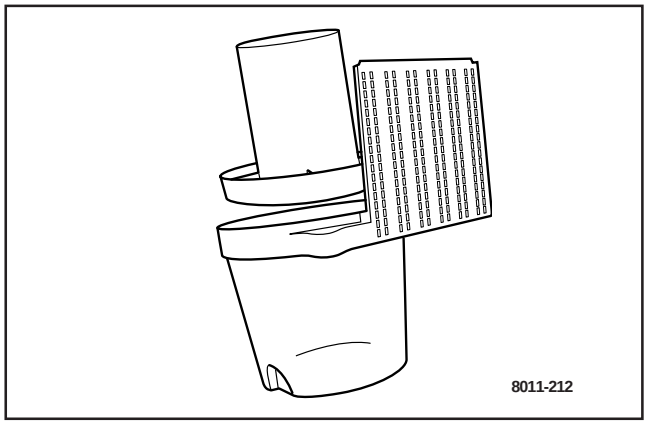


Remove the three screw holding the cyclone housing. Remove the housing with the air intake screen and remove the air channels.

The air channels may remain in the upper portion or follow along with the housing when removed.



Clean the components. Use water, detergent and a washing-up brush. Dry carefully.



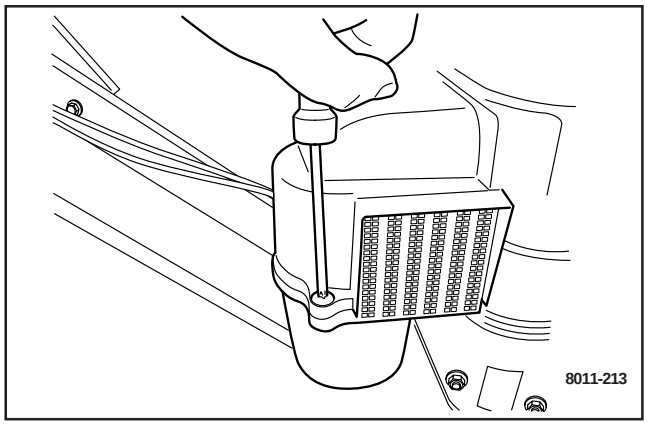
IMPORTANT INFORMATION

Exercise care when reassembling to avoid damaging anything.

Make sure when mounting that the air intake screen fits exactly in its guide in the upper portion.

Make sure the air channel ends up in the proper position.

Refit the components. Place the air channels in the cyclone housing. Insert cyclone housing into position and make sure it fits in the upper portion. DO NOT use force; rather coax it into place before fitting the screws.

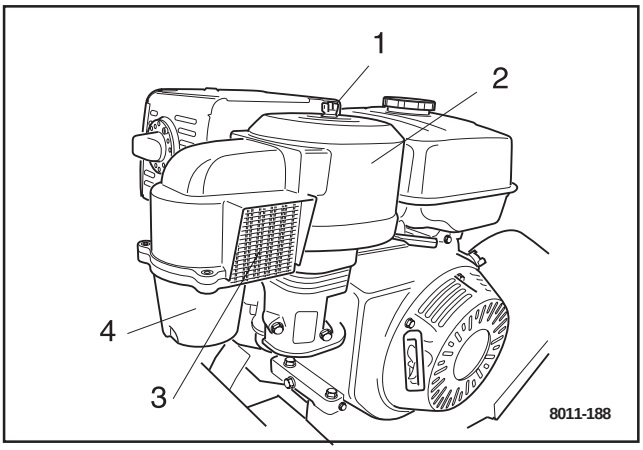


Replacing the air filter

If the engine seems weak, produces black smoke or runs unevenly, the air filter may be clogged. For this reason, it is important to clean and replace the air filter regularly (see the maintenance schedule for the proper service interval).

WARNING!

Allow the exhaust system to cool before performing service. Risk for burns.

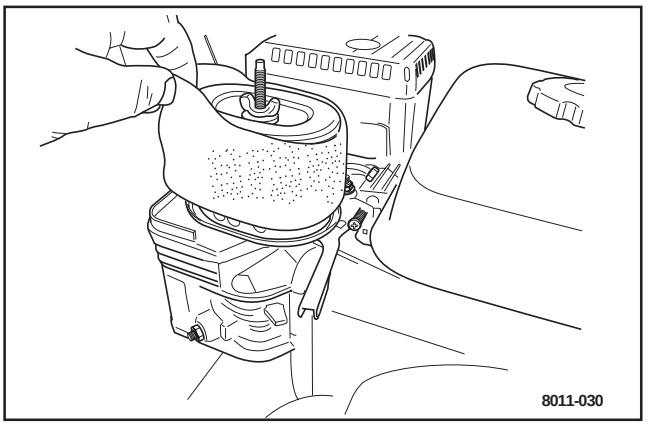


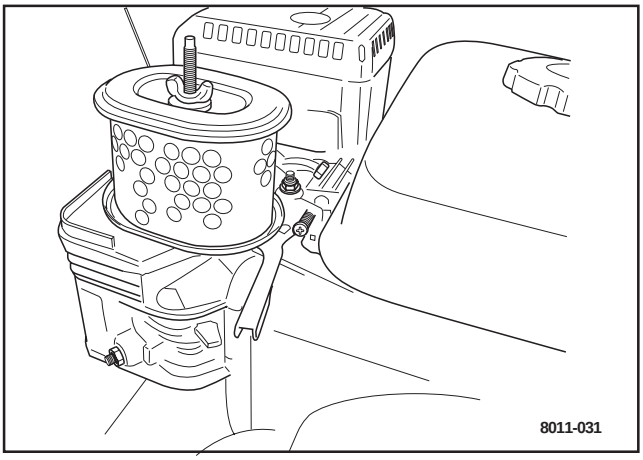
Cleaning/replacement of the air filter is carried out as follows:

1. Undo the wing nut (1) and lift off the cyclone filter with the air filter cowling (2).
2. Remove the foam rubber pre-filter and clean using a mild detergent.

   Squeeze it dry with a clean cloth.

   Soak it with new engine oil. Wind the filter in an absorbent cloth and squeeze out excess oil.
3. Remove the wing nut in the air filter and remove the paper filter. Tap the paper filter against a fixed surface to remove dust. If the paper filter is still dirty or damaged, it MUST be replaced.





IMPORTANT INFORMATION

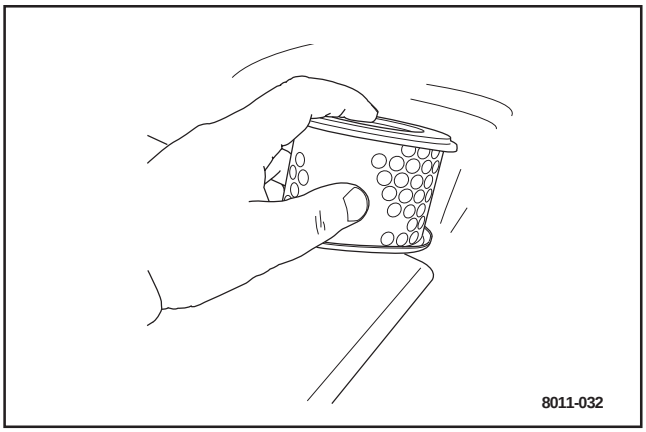
DO NOT use compressed air over 2 bar/ 30 PSI to clean the paper filter.

DO NOT wash the paper filter.

DO NOT oil the paper filter.

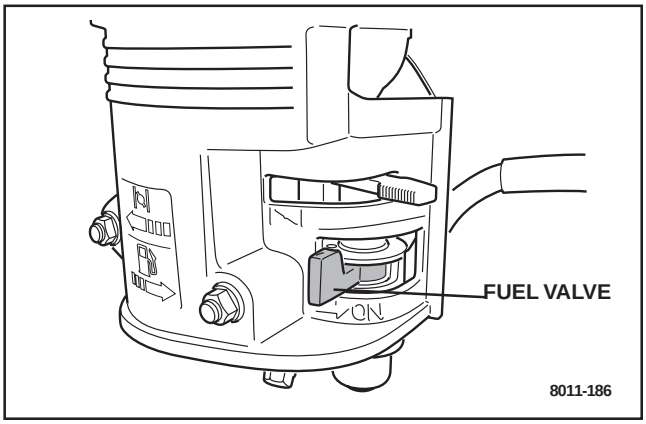
4. Refit the air filter as follows:

   Mount the paper filter in the air filter housing and tighten the wing nut.
5. Refit the pre-filter on the paper filter.
6. Refit the cyclone filter with the air filter cowling.

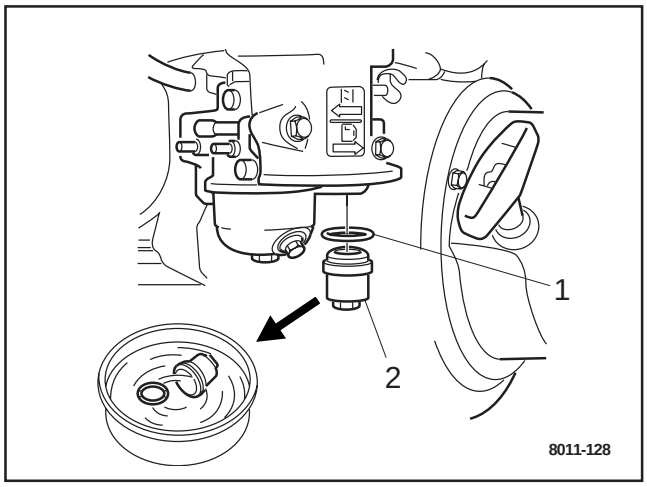


Cleaning the sludge reservoir

1. Close the fuel valve.



2. Unscrew the sludge reservoir (2). Make sure not to misplace the o-ring (1).
3. Clean the reservoir and the o-ring using a cleaning solvent and dry carefully.
4. Put the o-ring in place in its track and replace the sludge reservoir. Tighten it moderately to avoid damaging the threads.
5. Turn the fuel valve to ON and check for leaks. If it leaks, replace the o-ring.

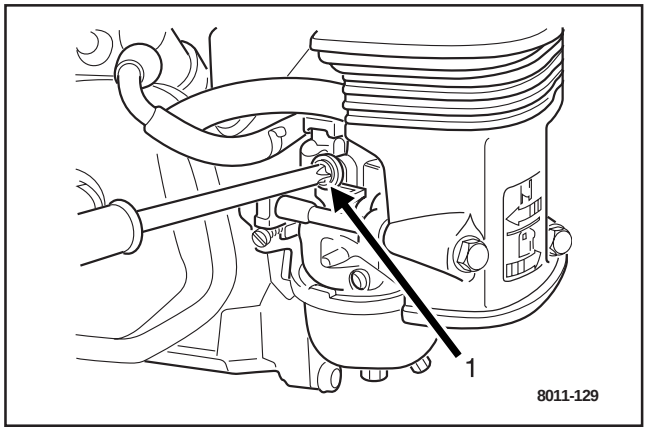


Idle adjustment

WARNING!

Risk for carbon monoxide poisoning. Perform the adjustment outdoors.

1. Start the engine and run it until it reaches normal working temperature.
2. Adjust the throttle to idle position or so that the engine runs at the lowest possible speed.
3. Turn the idle screw (1) so that the engine idles at 1250-1550 RPM.
4. Increase the idle speed with the throttle and move it right back to idle position. Check engine speed again.



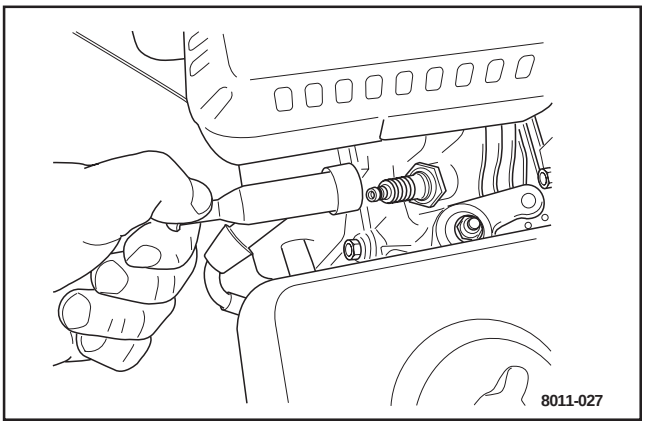
Ignition system

The engine is equipped with an electronic ignition system. Only the spark plug requires maintenance.

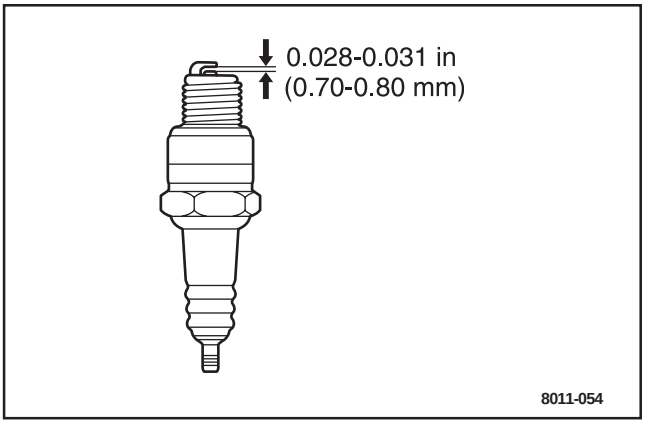
For recommended spark plug, see “Technical data”.

IMPORTANT INFORMATION

Fitting the wrong spark plug type can damage the engine.



1. Remove the ignition cable shoe and clean around the spark plug.
2. Remove the spark plug with a 13/16” (21 mm) spark plug socket wrench.
3. Check the spark plug. Replace the spark plug if the electrodes are burned or if the insulation is cracked or damaged. Clean the spark plug with a steel brush if it is to be reused.
4. Measure the electrode gap with a gapping tool. The gap should be 0.7-0.8 mm/0.028-0.031”. Adjust as necessary by bending the side electrode.
5. Reinsert the spark plug, turning by hand to avoid damaging the threads.



IMPORTANT INFORMATION

Inadequately tightened spark plugs can cause overheating and damage the engine. Tightening the spark plug too much can damage the threads in the cylinder head.

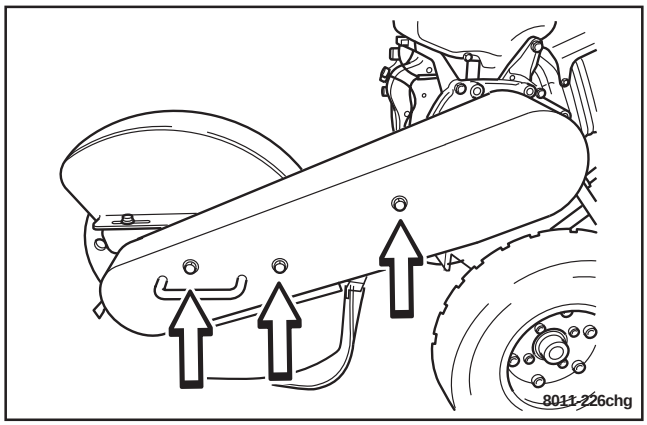
6. After the spark plug is seated, tighten it using a spark plug wrench so that the washer is compressed. A used spark plug should be turned 1/8-1/4 of a turn from the seated position. A new spark plug should be turned 1/2 a turn from the seated position.
7. Replace the ignition cable shoe.

Adjusting the drive belt

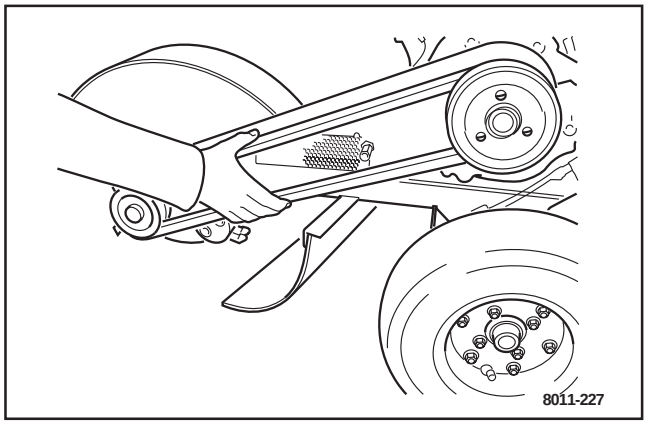
1. Remove the belt guard by removing the three acorn nuts and lockwashers on the front of the belt guard.

WARNING!

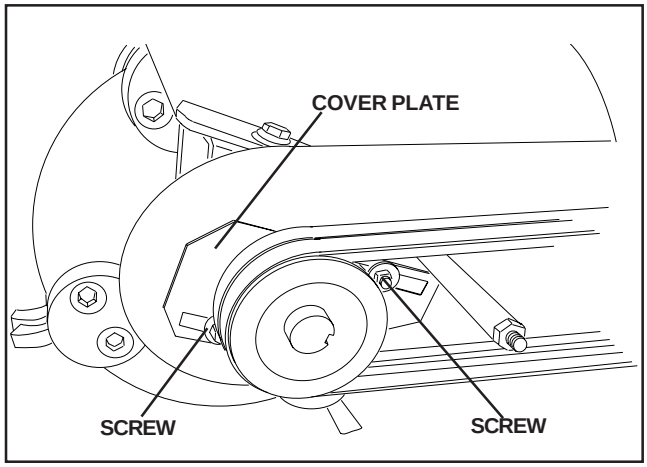
Prevent the engine from being started by removing the ignition cable from the spark plug.



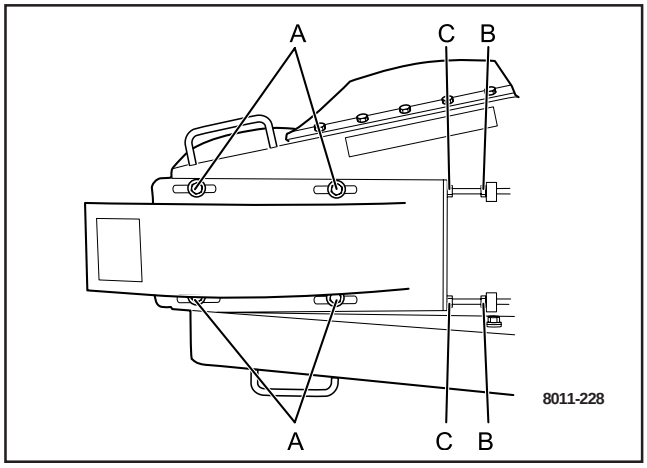
2. Check that the belt is properly tensioned by squeezing the belt together. It should be possible to squeeze the belt down about 1/4 - 3/8" (6 - 10 mm) from the original position.



3. Loosen screws holding cover plate to belt guard backing plate.



4. Undo the four screws (A) on the cutting shroud.
5. Loosen the locking nuts (B) on the tension bolts.
6. Turn the tension bolts (C) counter-clockwise to loosen the belt or clockwise to tighten it.



IMPORTANT INFORMATION

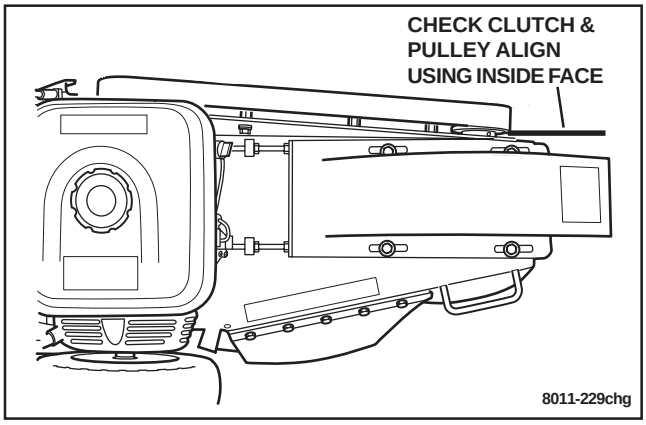
If pulley on cutter head shaft must be moved, the set screws MUST be fully removed, fresh "Loctite 242" put on threads and re-torqued to 100 - 110 in./lbs. (17513 / 19264 N•m).

7. Check that the pulleys are aligned using a staright edge along the inside face of the clutch and pulley.

   Pulleys must be inline. Maximum gap or mis-alignment is 1/16" (.062) or 15.7 mm.

   Adjust using the tension bolts as necessary.

   Check belt tension again.
8. Tighten all screws and nuts when the adjustment is complete. Be certain cover plate is not rubbing against cutter wheel shaft.
9. Refit the belt guard.



Disassembling and reassembling the blade, pockets and teeth

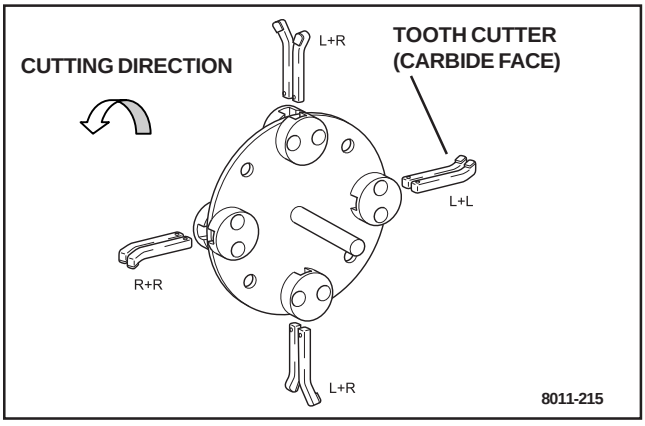
IMPORTANT INFORMATION

The cutters and pockets are mounted on the cutting wheel as illustrated.

L = Left mounting

R = Right mounting

Ensure that the tooth cutters are turned in the cutting direction.



WARNING!

The cutters can come loose from the cutting wheel if the screws are not sufficiently tight. Comply with the recommended torque settings.

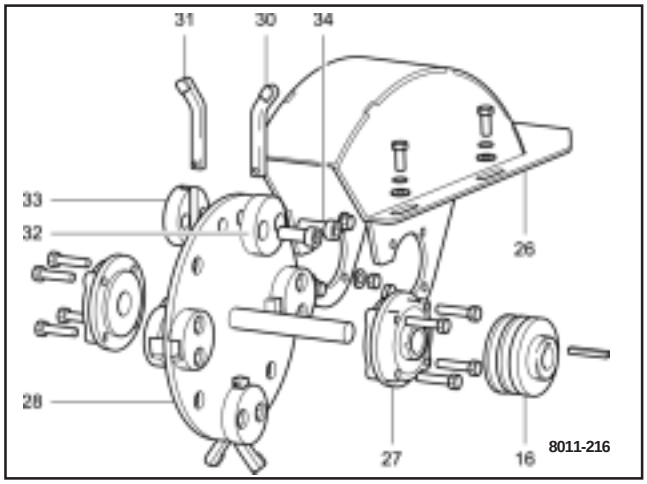
Hold the teeth (30-31) in place as in the upper diagram when mounting the pockets (32-33). Risk for incorrect assembly.

Insert the screw (34) in one pocket (32), through the blade section (28) and out though the pocket (33) on the other side.

Make sure that the roll pins in the back edge of the teeth are seated against the back of the pockets. This provides the correct gauging of the cutter edge.

Tighten the screws 120 - 150 ft/lbs. (162-203 Nm).

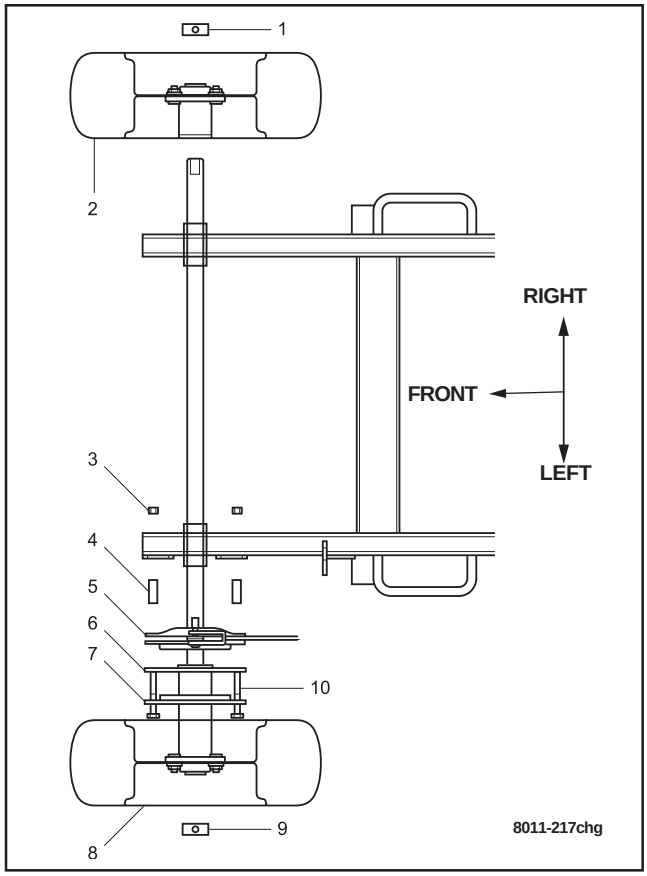
Insert a bar through the extra holes in the cutting wheel to act as a stop when removing and attaching the cutting teeth and bearings.



Removing and refitting the wheels

To remove the left wheel (8) from the stump grinder, remove the locking collar (9), the 1/4” screws (10), the 1/4” hex nuts (3), the springs (4) and the brake pad (7). The wheel can now be removed from the axle.

To remove the right wheel (2), remove the locking collar (1) and slide the wheel off the axle.

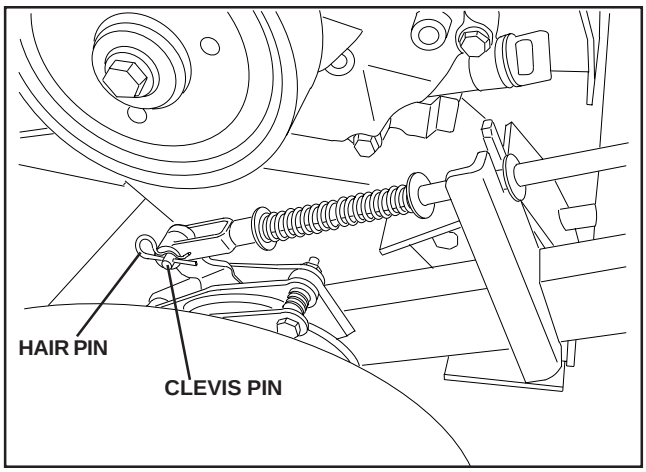


Adjusting the brake

Overcentering type handle activites brakes.

Undo clevis pin from brake and turn clockwise to tighten brake or counter clockwise to loosen.

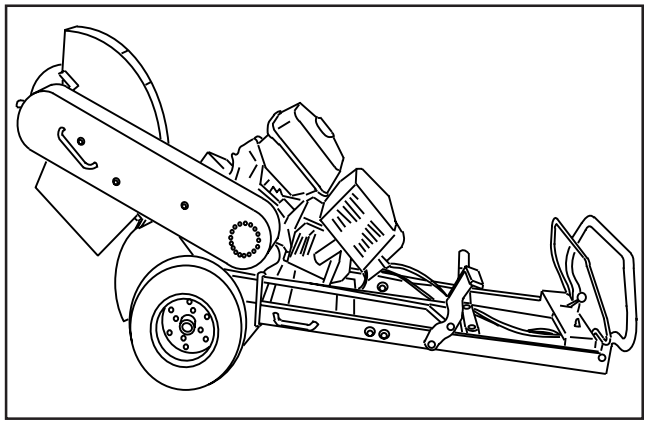
Tighten so handle snaps down when locked but unlocks easily when handle is moved forward. Brake is properly adjusted when wheel will not turn when you try to push or pull unit.



Two minute rule

The machine may be tipped backward or on its side to facilitate access for cleaning or service, but **no longer than 2 minutes.**

If the machine is held in this position for too long, the engine can be damaged by gasoline draining into the crankcase. Should this happen, perform an extra oil change on the engine. Remove the spark plug and turn the engine over a few revolutions with the starter handle before starting the engine again.



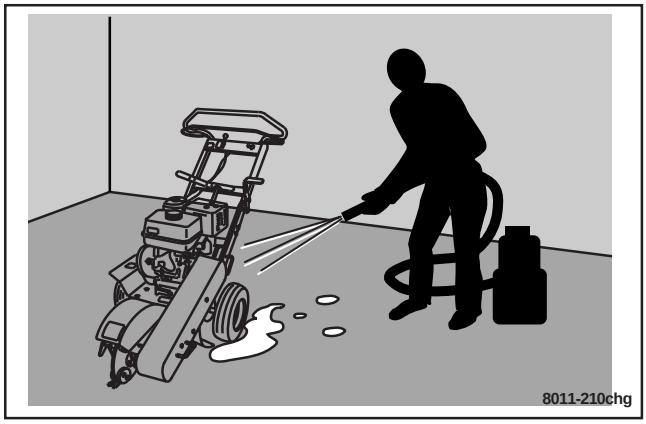
Cleaning and washing

Regular cleaning and washing will increase the machine's lifespan. Make it a habit to clean the machine directly after use, before the dirt sticks.

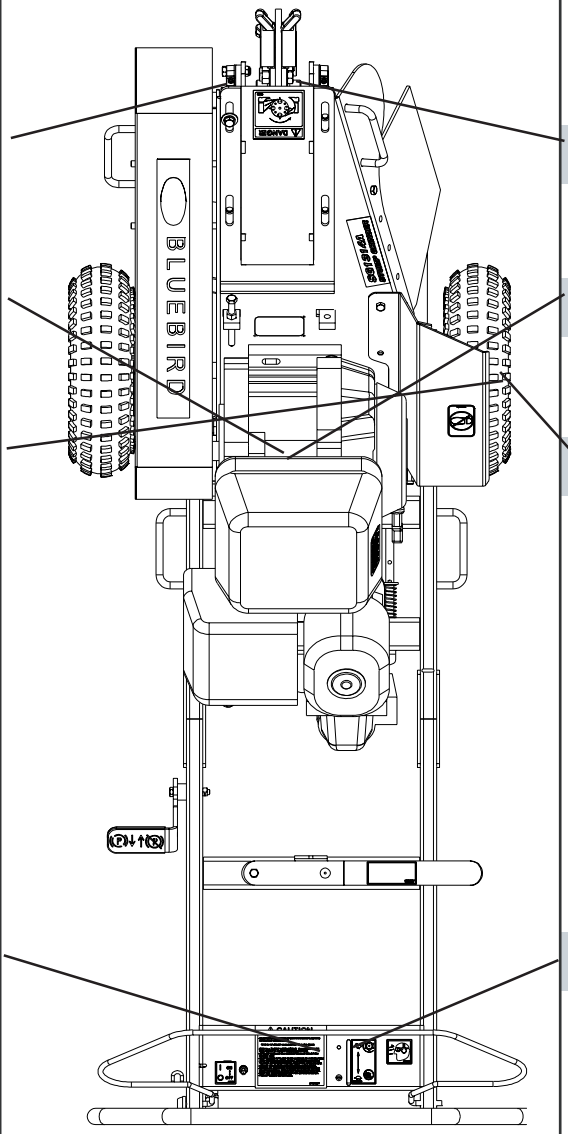
Check before rinsing that the fuel tank lid is properly in place to avoid getting water in the tank.

Use caution when using high-pressure spray because warning decals, instruction signs and the engine can be damaged. **Do not exceed 70 bar/ 1000 PSI water pressure when cleaning.**

Lubricate the machine after cleaning. This is particularly important if the machine is to be stored.



LUBRICATION

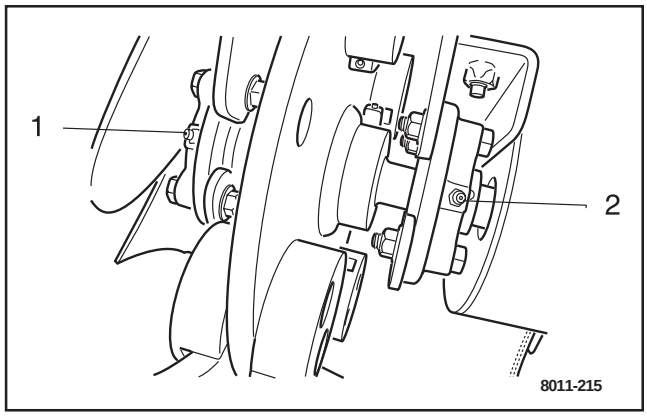
Yearly	6 Months	Weekly	Daily				4 Hours	50 Hours	100 Hours	300 Hours
				1		1				
				2		2				
				3		3				
				4		4				

8011-276ch

1. Blade shaft bearings

Lubricate using a grease gun until the grease squeezes out, 2 nipples (1, 2).

Use good quality high temperature multilith grease (i.e. Mobilith SHC 220 or equal).



2. Engine oil

The engine should be warm (but not hot) when changing the oil. Warm oil flows out faster and leaves a smaller quantity of old oil inside the engine.

1. Place a suitable vessel underneath the oil drainage screw. Remove the oil dipstick and the oil drainage screw (5) on the back surface of the engine.

Tip: Make a channel using a piece of cardboard to lead the oil directly into the vessel and avoid soiling the machine chassis.

2. Allow the engine oil to drain into the vessel; then replace the drainage screw. Tighten it moderately.

IMPORTANT INFORMATION

Used engine oil is a health hazard and legislation prohibits disposal on the ground or in nature; it should always be disposed of at a workshop or appropriate disposal location. Avoid skin contact; wash with soap and water in case of spills.

3. Make sure the machine is parked on flat ground. Fill with new oil using the appropriate viscosity according to the diagram, API Service SF-SG, to the upper level mark on the dipstick = threads on the oil dipstick (2). The engine takes 1.16 qts. (1.1 liters) of oil. When checking the oil level, the dipstick should **not** be screwed in.
4. Check that the rubber gasket is in position and screw the dipstick back into place. DO NOT thighten it askew or too hard or you may damage the threads.
5. Wipe up any spilled oil.

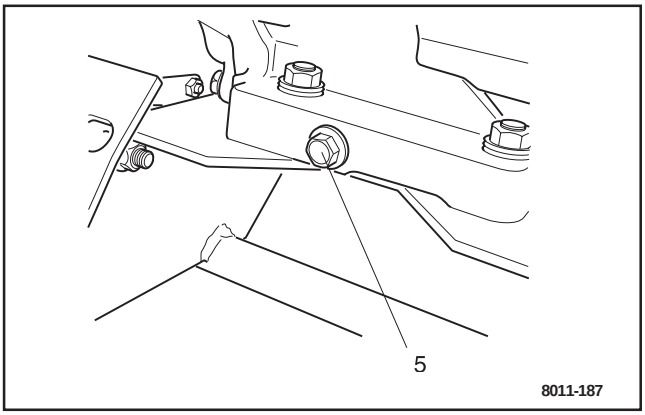
Checking the engine's oil level.

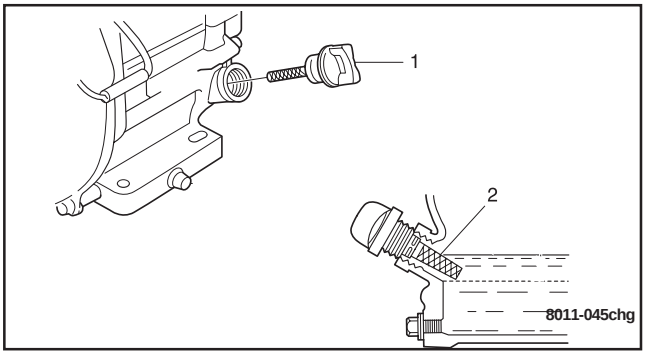
Make sure that the machine is parked on flat ground with the engine stopped when checking the oil level.

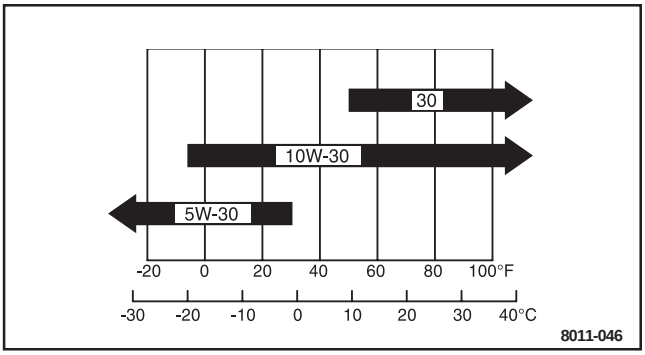
1. Unscrew the dipstick and wipe it using paper towel or a lint-free rag.
2. Replace the dipstick without screwing it in. Remove and check the level on the dipstick.
3. Fill oil as necessary to the lip of the dipstick hole. Oil type, see above.
4. Check that the rubber gasket is in position and screw the dipstick back into place. DO NOT tighten it askew or too hard or you may damage the threads.

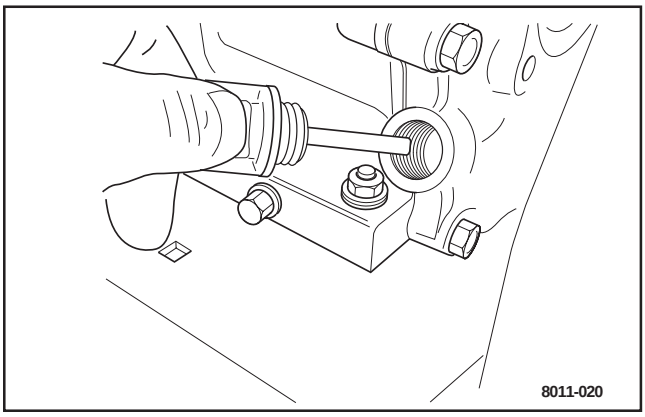
WARNING!

Engine oil can be very hot if it is drained directly after stopping the machine. Allow the engine to cool somewhat.





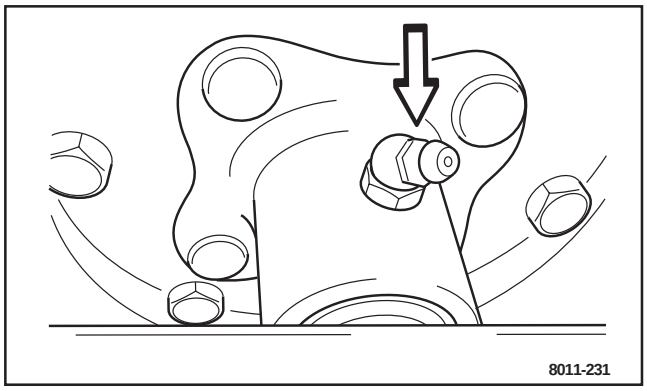




3. Right wheel

Lubricate using a grease gun until the grease squeezes out, 1 nipple.

Use good quality MP grease. Grease from well-known brand names (petrochemical companies, etc.) usually maintains a good quality.

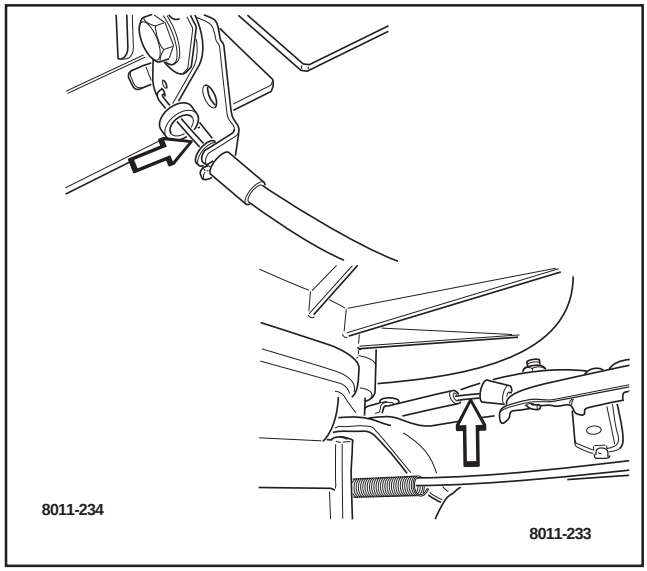


4. Throttle cable

Peel back the rubber covers at both of the cable mountings. Grease both ends of the throttle cable and move the controls to end stop positions when lubricating. Refit the rubber covers on the cable after lubrication. Cables with sheaths will bind if they are not lubricated regularly. Binding in a cable may cause malfunction.

If the cable binds, remove the cable and hang it vertically. Lubricate it with thin engine oil until the oil begins to escape from the bottom.

Tip: Fill a small plastic bag with oil and tape it so that it seals against the casing and allow the cable to hang vertically from the bag overnight. If you do not succeed in lubricating the cable, it must be replaced.



TROUBLESHOOTING

Symptom	Cause	Action
The engine will not start		
• User error	Fuel valve closed. Choke valve open. Engine switch in OFF position.	Open the fuel valve. Close the choke with cold engine. Turn engine switch to ON.
• Fuel system	Fuel tank empty. Machine stored without observing proper procedure from chapter “Storage/Winter storage”. Contamination, water or ice in fuel system Carburetor problems.	Fill with fuel. Clean tank, sludge reservoir and empty carburetor. Fill the tank with fresh fuel. Clean tank, sludge reservoir, fuel lines and carburetor. Fill the tank with fresh fuel. Contact an authorized service workshop.
• Spark plug	Wrong spark plug type. Buildup on electrodes. Short circuit. Gasoline or oil on the spark plug.	Replace the spark plug. Check electrode gap and clean or replace spark plug. Clean the spark plug. Air the engine out. Start with full throttle.
• No spark after checking spark plug	Faulty engine switch, cable or ignition.	Contact an authorized service workshop.
• Low compression	Serious interior engine damage or faulty valves.	Contact an authorized service workshop.
Engine is gutless or runs unevenly		
• Air filter	Clogged air filter.	Clean or replace the air filter.
• Fuel system	Machine stored without observing proper procedure from chapter “Storage/Winter storage”.	Clean tank, sludge reservoir and empty carburetor. Fill the tank with proper fuel.
(Blue exhaust) (Voluminous blue-white exhaust)	Tank filled with 2-cycle mixed oil. Tank filled with diesel.	Fill the tank with proper fuel. Clean tank, sludge reservoir and empty carburetor. Fill the tank with proper fuel.
(Black exhaust)	Choke left on. Clogged air filter. Carburetor problems	Open choke valve. Clean or replace the air filter. Contact an authorized service workshop.
• Ignition system	Wrong spark plug type. Buildup on electrodes. Short circuit. Faulty ignition unit.	Replace the spark plug. Check electrode gap and clean or replace spark plug. Contact an authorized service workshop.
• Low compression (possible blue exhaust)	Serious interior engine damage or faulty valve.	Contact an authorized service workshop.

TROUBLESHOOTING

Problem	Possible solutions
Belt coming off.	1. Pulleys not aligned. 2. Belt tension is insufficient. Adjust belt tension.
Belt engages late or slips.	1. Tighten the belt as described in the operator's manual. 2. Reduce cutting depth.
Belt not staying tight after adjustment.	1. Check for damage on the axle, pulley or key. Make sure that the setscrews are properly tightened. 2. Replace damaged parts.
The cutting wheel does not rotate.	1. Engine speed is insufficient to activate the centrifugal clutch. Make sure the throttle cable is working properly. 2. Belt tension is insufficient. Adjust belt tension. 3. Clutch is worn - replace shoes and springs, and/or clutch bearings.
The cutting wheel continues to rotate.	1. Check that the throttle is disconnected. 2. Check for damage on the throttle cable. 3. Check that the throttle cable is properly mounted on the throttle valve. 4. The engine speed is not under 1000 rpm, which is required to disengage the centrifugal clutch. 5. Inspect springs on clutch shoes. If tension on clutch shoes is not enough to pull shoes back, replace springs and clutch shoes.
The parking brake is slipping.	1. Adjust the brake tension in the manner described in the operator's manual. 2. Check for damage on the brake rod or lever. 3. Check for wear on the brake pads. Replace as necessary.

STORAGE

Winter storage

At the end of the season, the machine should be readied for storage (or if it will not be in use for longer than 30 days). Fuel allowed to stand for long periods of time (30 days or more) can leave sticky residues that can plug the carburetor and disrupt engine function.

Fuel stabilizers are an acceptable option as regards sticky residues during storage. If alkylate gasoline (Aspen) is used, stabilizers are unnecessary because this fuel is stable. However, you should avoid switching between regular and alkylate gasoline as sensitive rubber components can harden. Add stabilizer to the fuel in the tank or in the storage container. Always use the mixing ratios specified by the manufacturer of the stabilizer. Run the engine for at least 10 minutes after adding the stabilizer so that it reaches the carburetor. DO NOT empty the fuel tank and the carburetor if you have added stabilizer.

NEVER store an engine with fuel in the tank indoors or in poorly ventilated spaces where fuel vapor can come in contact with open flame, sparks or a pilot light such as in a boiler, hot water tank, clothing drier, etc. Handle the fuel with caution. It is very flammable and careless use can cause serious damage to person and property. Drain the fuel into an approved container outdoors and far away from open flame. NEVER use gasoline for cleaning. Use a de-greaser and warm water instead.

Service

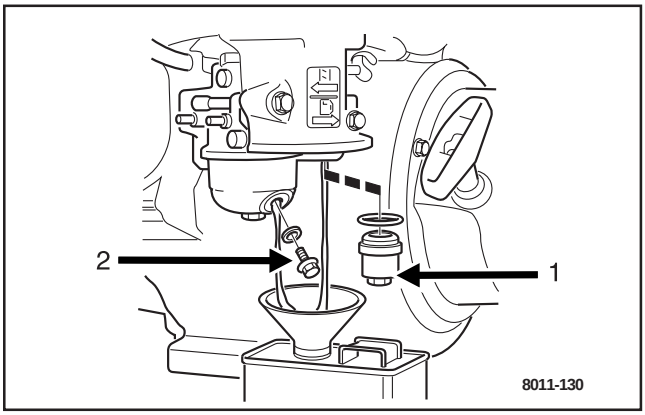
When ordering spare parts, please specify the puschase year, model, type, and serial number.

Always use genuine BlueBird parts.

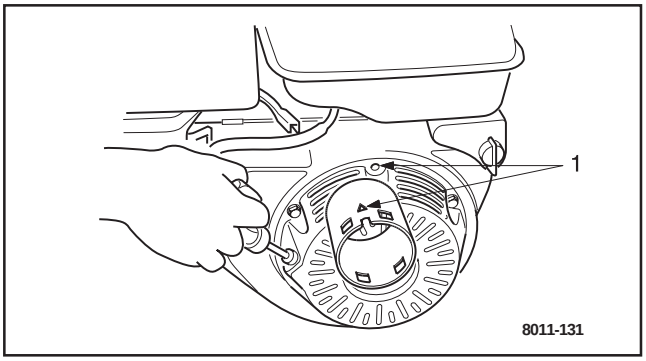
An annual check-up at an authorized service workshop is a good way to ensure that your machine performs its best the following season.

To ready the machine for storage, follow these steps:

1. Clean the machine carefully, particularly the chassis and working equipment. Touch up damage to the paint to prevent rust.
2. Inspect the machine for worn or damaged parts and tighten any nuts or screws that may have become loose.
3. Change the engine oil; dispose of properly.
4. Open the fuel valve. Empty the fuel tank (1) and the carburetor (2).



5. Close the fuel valve.
6. Remove the spark plug and pour about a tablespoon of engine oil in the cylinder. Turn over the engine so that the oil is evenly distributed and then refit the spark plug. Put the engine in the compression phase where the triangle mark on the sleeve of the starter is aligned with the upper hole in the starter. Note: Compression phase occurs every second revolution.



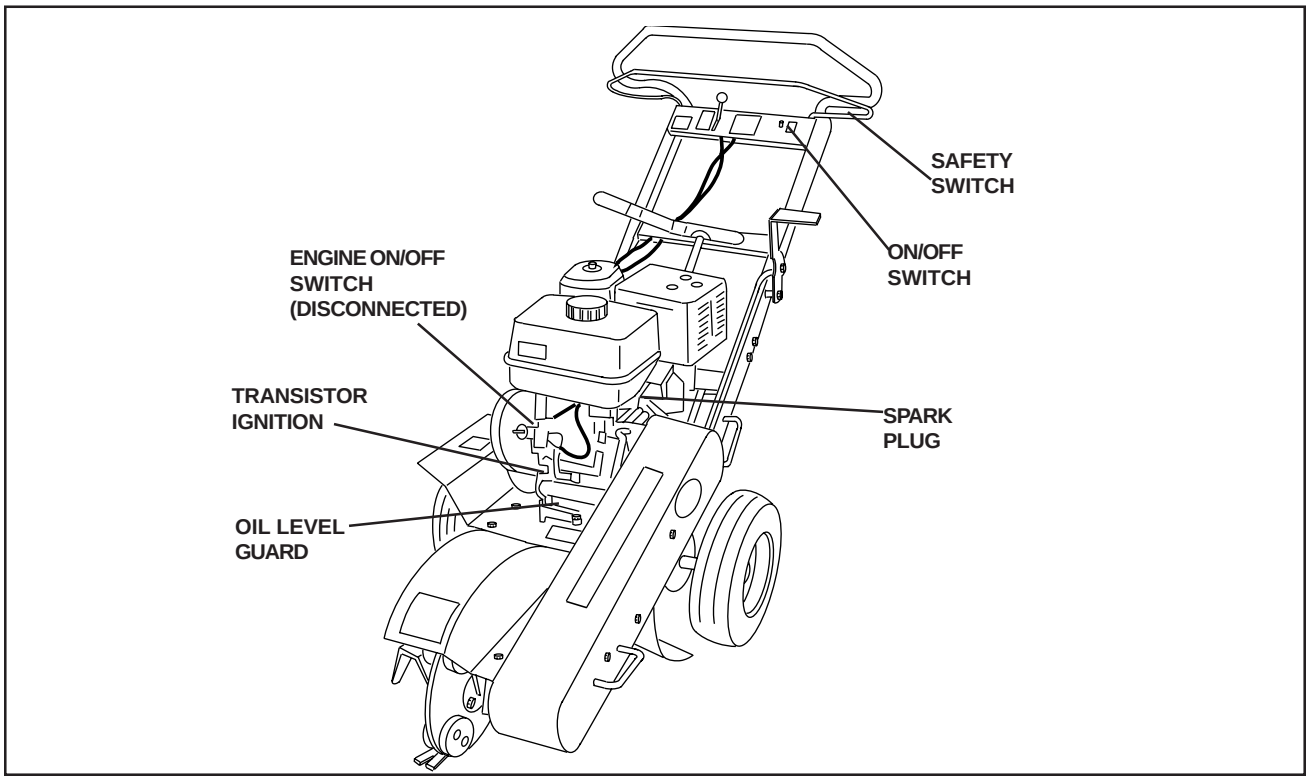
7. Lubricate all grease nipples, joints and cables as described in the chapter “Lubrication/ Lubrication schedule”.
8. Store the machine in a clean, dry place and cover it for extra protection.
9. Cover the blade and cutters with a thin coat of oil to avoid rust.

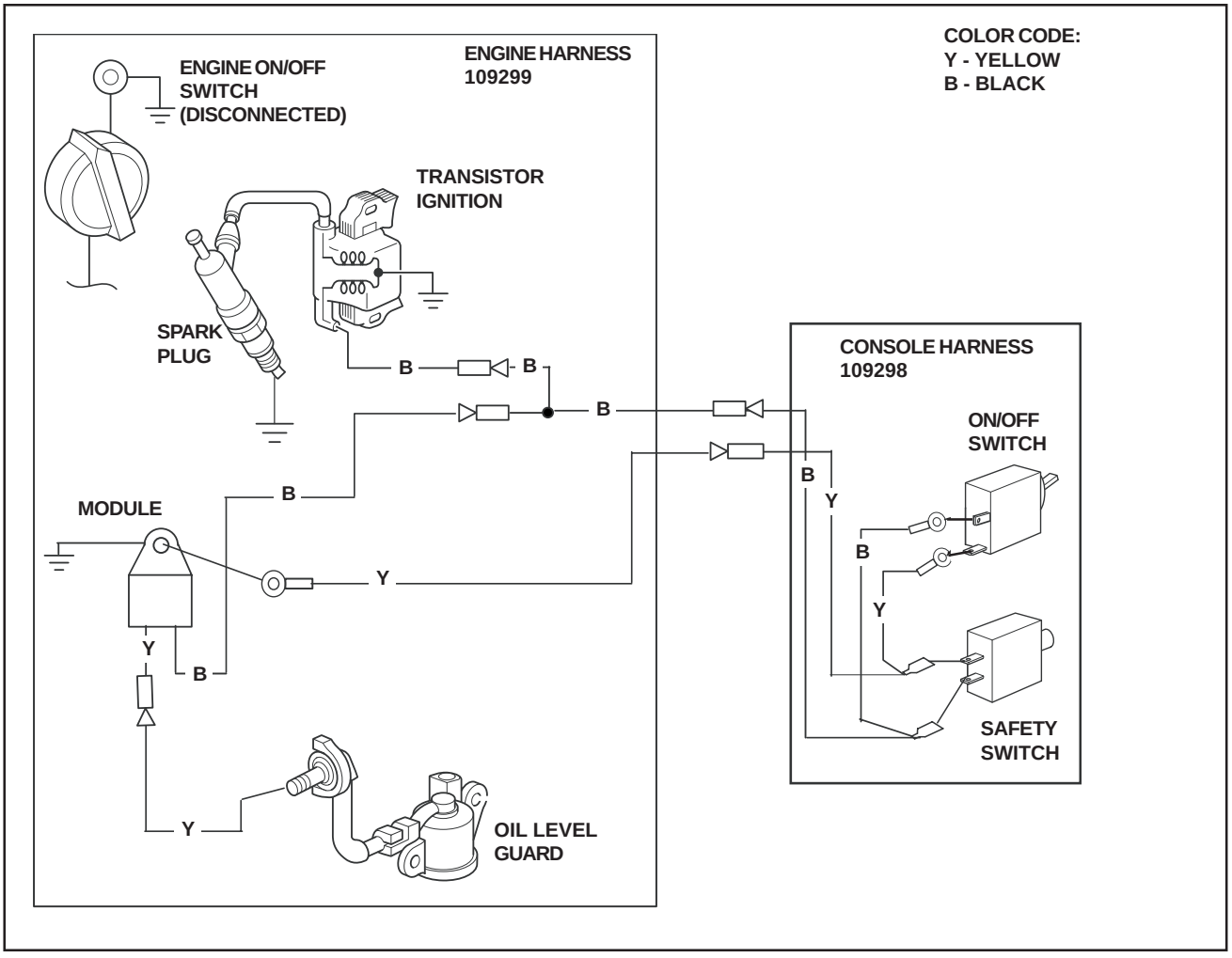
TECHNICAL DATA

SPECIFICATIONS:

Model	**SG1314A**
Engine	Honda GX390
Cylinder volume	389 cm^3 (23.7 cu in)
Power	13 hp (9.6 kW) at 3600 RPM
Torque	26.5 Nm at 2500 RPM
Idling speed	1250-1550 RPM
Spark plug	NK BPR6ES DENSO W20EPR-U
Fuel tank volume	6.5 liters/1.72 US Gal
Tires	4.10-6 (12” pneumatic)
Brake	Disk - Lever activated
Drive	Direct
Belt	Gates HiPower double V-belt BP54
Clutch	Noram centrifugal clutch
Cutting wheel	14” dia. x 3/8” thick disc (157.5 mm x 9.5 mm)
Cutters	8 cutters with tungsten carbide tips including pocket
Cutting depth	Approx 12” (30.48 cm)
Length	62” - 73” (157- 185 cm) depending on handle position
Width	27” (69 cm)
Height	24” - 43” (61 - 109 cm) depending on handle position
Weight	249 lb. (112.9 kg)

WIRING DIAGRAM





SERVICE JOURNAL

Action	Date, stamp, signature
Delivery service 1. Break the packaging and make sure the machine has not been damaged in transport. 2. Where applicable, assembly accompanying components. 3. Check that the machine design corresponds to the customer order. 4. Check that the right amount of oil is in the engine and transmission. 5. Check and adjust air pressure in the tires. (25 psi max.) 6. Check that the working equipment is properly set. 7. Check that the drive pulleys and sprockets are aligned. 8. Check that belts and chains are properly adjusted. 9. Lubricate the machine as described in the lubrication schedule. 10. Fill the fuel tank and start the engine. 11. Check that the machine and working equipment do not move in neutral. 12. Check all operating instruments. 13. Check decals and information attached to the unit. 14. Check the engine speed (RPM), see Technical Data. 15. Check for leakage. 16. Inform the customer about: The need and advantages of following the service schedule. The need and advantages of leaving the machine for service every 300 hours. The effects of service and maintaining a service journal on the machine's resale value. 17. Fill in the sales papers, etc.	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Delivery service has been carried out. No remaining notes. Certified:
After the first 20 hours 1. Change engine oil. 2. Change oil in reduction gear, where applicable. 3. Check that belts and chains are properly adjusted. 4. Tighten screws and nuts.	☐ ☐ ☐ ☐

SERVICE JOURNAL

Action	Date, stamp, signature

SERVICE JOURNAL

Action	Date, stamp, signature

P.O. Box 8
Beatrice, Nebraska 68310